PROMOTING EMERGENT READING THROUGH
THE USE OF E-BOOKS

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Promoting Emergent Reading Through the Use of E-books

by

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Abstract

This study examines how a group of four Kindergarten students' phonological awareness and cuing strategies can be supported through e-books. Research on emergent literacy concludes that children who read well, read more, and acquire more knowledge (Bus, De Jong, & van Ijzendoorn, 2007; Hindman, Connor, Jewkes, & Morrison, 2008; Korat, 2010). Many of the students in this study have high reading needs and require additional supportive reading opportunities throughout the day. The Oxford Reading Tree CD-ROM e-book series offered these emergent readers an opportunity to develop reading strategies. An individual action research approach was used through qualitative data collection measures (field notes, journals, portfolio samples, transcribed conversations, Developmental Reading Assessment and Dolch High Frequency Word Recall list) to assess reading progress. A key finding of the study noted an increase in e-book reading engagement fostered the application of cuing strategies such as a) initial and final letter sound recall; b) picture cuing; and c) reading ahead. In addition to phonological and cuing strategy improvement, there was a marked increase in high frequency word recall, story sequencing and comprehension. As a result of these changes, students brought their reading understanding into other areas of their learning such as investigating conventional paper based reading books including exploring independent writing. The author

anticipates that continuing research in this area will assist the future use of e-books in emergent reading.

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List of Abbreviations

Computer Assisted Learning	CAL
Developmental Reading Assessment	DRA
Dolch High Frequency word list	DHF
Drop Everything and Read	DEAR
Early Learning Kindergarten program	ELK
Education Quality and Accountability Office	EQAO
Electronic Book	e-book
Oxford Reading Tree	ORT

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Chapter One: Origins of the Problem

1.1 Introduction

Electronic books (e-books) are growing in popularity in early childhood classrooms in an effort to encourage reading engagement while supporting areas such as phonological awareness, decoding strategies and reading enjoyment. This study will assess current literature pertaining to emergent reading and e-books focusing on how my research can be translated into best practice within my classroom.

Current literature suggests that the use of high quality e-books may support emergent reading development in particular oral language, phonological awareness, comprehension and reading engagement/enjoyment. E-books offer the reader a chance to listen to and interact with the story through digital features such as narrator support, word pronunciation and animation.

1.2 The Problem

The origin of this study evolved from a pressing need to provide emergent readers in my class with an alternate and engaging reading source. Due to extenuating circumstances, many children from our community arrive in our Early Learning Kindergarten (ELK) program unprepared. Factors hindering progress are associated with weak oral language, limited exposure to printed text and adult role modeling while at home. Due to the size of my class and the high literacy need, daily individual and group reading times are difficult to maintain.

After administering a Developmental Reading Assessment (DRA) on emergent readers in my classroom in February 2009, the results revealed students reading and understanding had remained the same over the course of the term. Further investigation revealed students were unable to employ reading strategies effectively which elevated negative behaviors while in class.

There is growing research investigating the development of emergent literacy and oral language through the use of conventional story books. More specifically early reading has been known to support language and literacy skills such as letter and sound identification, oral language development and print awareness. E-books are a possible resource that will help scaffold both literacy and language skills when considering strategies that could be used to support emergent reading. There currently exists continuing research on the use of e-books to support literacy development with a variety of learners. At present however, there is limited evidence to support the effectiveness for e-books for emergent readers. It is therefore the intention of this action research study to examine how e-books can be used to support emergent readers within my class.

1.2.1 Background

Currently our school performs well below the Ontario Provincial Educational Standards for the Grade Three and Grade Six Education Quality and Accountability Office (EQAO) Literacy Testing. During a discussion with these teachers, they commented students struggle with decoding words, there by affecting the meaning of the text.

Examining the reading development of students within my own kindergarten classroom, I noticed similarities. I undertook this action research study to examine teaching and reading strategies that would support emergent readers in my Senior Kindergarten classroom. I wanted to understand how these children develop their reading skills and what motivates them to read.

An important strategy in learning to read is the acquisition of phonological awareness, which is an awareness of sounds and patterns of sounds in spoken words. Strickland (1998) noted that understanding these sounds is achieved by using decoding strategies to unlock the meaning of words. Two key decoding strategies used are picture cuing and chunking (looking for recognizable chunks of letters). These decoding strategies help children make connections between words or groups of words that create meaning for them. During the emergent phase of literacy acquisition, children rely on these two key cuing strategies to help them learn literary skills. Recent research indicates that children who begin school with strong print and oral language awareness have an advantage when it comes to learning to read because their cuing strategies are well developed. It was therefore important within my Senior Kindergarten class that print and oral language awareness skills be made a priority.

Children who enter our Early Learning Kindergarten (ELK) program require considerable support to develop their basic oral language skills, letter and sound recognition along with print awareness. This delay in development might be due to limited support they received at home during their formative years of early childhood development, which could be a result of illiteracy among their parents. In our community, there is a high proportion of adult illiteracy. If these children are to

progress, they are going to require structured classroom intervention to ensure that their reading strategies are modelled and embedded so cuing systems become automatic for them. When I choose the reading intervention program to support the emergent readers within my classroom, I based my selection on the following goals: (a) the desire to increase the frequency with which emergent readers were reading; (b) to provide alternative reading resources that would support their independent reading experience; and (c) to develop cuing systems such as phonological development.

Recent research into the effectiveness of e-books for literacy development demonstrated promising results in several areas. Research studies conducted by De Jong and Bus (2003) and Lewin (2009) revealed that there was improvement in word recognition following the use of e-books. Chera and Wood (2003) reported that the use of e-books supported young children's phonological awareness. Their research revealed that kindergarteners aged 3-6 who were exposed to e-books during a four-week program were more advanced in their phonological awareness than the children in the control group. Researchers Segers and Verhoven (2008) conducted research with immigrant kindergarten children examining the impact on vocabulary and e-books. Their study concluded that children who used e-books to support their vocabulary development demonstrated an improvement in their verbal knowledge. Educators and researchers alike view e-books as a resource which has the potential to support developing readers, but continued research is needed.

Plowman and Stephen (2003) found that computer assisted learning technology can promote children's language and literacy development. Their findings revealed that a computer assisted learning (CAL) environment can offer learners a

range of benefits, which can include (a) control over their learning that allows them to gauge their pace; (b) instant feedback that encourages self-checking; (c) independence; and (d) the capacity to break reading down into its basic parts.

The computer-based materials I chose to include in my study were taken from the Oxford Reading Tree (ORT) reading series. The ORT reading series originally began as a collection of text-based books and were designed to promote reading by teaching early decoding strategies such as picture cuing and word chunking, as well as developing students' high-frequency word vocabulary. The ORT CD-ROM series (2004) actively encourages children to participate in the reading experience through the use of animated illustrations that help students to read along with the highlighted narrated text. The ORT software is designed to be operated by students, so it supports independent reading. Once students are drawn into the process of reading, the teacher can begin embedding reading strategies. The software allows the teacher to read with a number of children, while targeting individual reading strategies. Each CD-ROM offers the emergent reader a variety of texts to choose from. Students are able to read the text on their own with the help of the narrator.

Due to the large number of students in my class who would benefit from additional reading support and have not acquired strategies through reading conventional text could the e-book offer them a reading alternative? As I developed my approach to teaching students how to read, I focused on four key questions to help me assess the success rate of this adapted methodology. These questions are further discussed in detail within the purpose statement.

1.2.2 The Purpose

The purpose of this study was to examine how Senior Kindergarten students' emergent literacy could be supported within a CAL environment that incorporated e-books. More specifically, this research examined the effects on emergent readers' phonological awareness when using the decoding strategy with e-books. Furthermore, this research would help me, as a teacher-researcher by developing strategies that could be used to support emergent readers. To achieve this purpose, the research study utilized an individual action research approach.

1.2.3 Research Question

The research questions of this thesis were:

- How was emergent literacy for Senior Kindergarten students being supported within a CAL environment that incorporated e-books?
- What were the effects on phonological awareness when using a decoding strategy with a CAL environment that incorporated e-books?
- What was the role of the teacher in supporting emergent literacy through a CAL environment that incorporated e-books?
- What was the effect on my practice in the classroom when I used a CAL environment that incorporated e-books to support emergent literacy?

1.3 Summary

In the following chapters I will present a theoretical perspective discussing how e-books were used to support emergent reading development. I will discuss the importance of continued and ongoing literacy through phonological awareness and will also argue that decoding strategies can be used to support emergent reading development with e-books. The literature review will discuss how current research is being used to deepen our understanding of how e-books are being used to foster reading development. Following the literature review, the research methodology will be discussed examining our school's demographics, data collection methods and concluding with a discussion on how the integrity of the study was maintained. The next chapter will describe how the action research cycle was used to generate research data to facilitate change within my practice. The final chapter will interpret the data through the action research cycle, placing it into context from the view point of the student, and of the teacher.

Chapter Two: Literature Review

2. 1 Introduction

The purpose of this chapter is to present a theoretical perspective discussing how e-books can be used to support emergent reading development. This chapter will begin with an introduction focusing on the importance of continued and ongoing literacy support to develop sound reading and writing skills. Next, the role of phonological awareness will be presented as a cuing strategy. It is argued here that decoding can be used to support emergent reading development. The chapter will highlight how the creation of a successful reading experience is critical for student achievement and how reading difficulties can be supported through the use of a CAL. The final section of the literature review will discuss how a CAL environment that uses e-books has been used in research to support emergent reading development.

2.2 Emergent Literacy

The term emergent literacy refers to reading and writing knowledge and the associated behaviors of children who are not yet conventionally literate. It is during this emergent literacy phase of development that children gain knowledge about reading and writing through simple acts of observing and participating in formal and informal literacy events. Saracho and Spodek (2009) in their research observed that adults who act as reading facilitators help children gain important literacy skills in areas such as: a) the role print plays in communicating messages (print awareness); b) the sound structures of oral and written language (phonological awareness); and c) the

nature of letters and other print symbols (alphabetic knowledge). It is this emergent reading experience which provides children with an important foundation for their later literacy development. Before children learn to read there are three areas of literacy development which need to be in place. These areas include: (a) oral language; (b) print knowledge and (c) phonological processing (Moody, Justice, & Cabell, 2010; Shamir, Korat, & Barbi 2008; Shamir & Shlafer, 2011; Whitehurst & Lonigan, 2001).

- Oral Language – is vocabulary knowledge, syntactic knowledge and narrative knowledge.

- Print Knowledge – is the understanding that the English language utilizes 26 letters in the alphabet each with a specific sound. These letters and sounds create words that represent printed words.

- Phonological Processing – is alphabetic language which represents language at the phoneme level (letters typically correspond to phonemes or sounds in words).

Emergent literacy is a cycle of acquiring new information, making sense of it, placing it into context, then applying what has been learned. In this section, the typology of emergent literacy will be discussed examining how language, conventions of print, knowledge of letters, and linguistic awareness lead to emergent literacy. Then aspects of emergent reading will be presented and this section concludes with motivational factors that help children learn to identify print.

2.2.1 Influences of Parents/Adults/Socio-economic Background

The importance of reading skills that children acquire while at home and in preschool cannot be underestimated as it provides a foundation for their later reading success. A number of research studies on emergent literacy concluded that children who read well, read more, and as a result acquire more knowledge in numerous academic domains (Echols, West, Stanovich, & Zehr, 1996; De Jong & Bus 2002; Whitehurst & Lonigan, 2001). In contrast, Korat (2010) and Whitehurst and Lonigan (2001) found that children who lagged behind in their reading skills received less exposure to printed text and had fewer opportunities to read. These studies confirm the importance of early exposure to reading experiences and reinforce the role parents play in reading development.

The importance of shared reading with a parent or adult brought forward in Bus, De Jong and van Ijzendoorn (2007) meta-analytic review of research literature showed an overall positive effect of adult joint storybook reading on children's emergent literacy and reading achievement. Also, Sénéchal and LeFevre (2002) in their study demonstrated that children's early exposure to reading experiences helps develop vocabulary, listening and comprehension skills, which impacts upon their reading in the later primary grades. A recent research study conducted by Hindman, Connor, Jewkes and Morrison (2008) revealed that shared book reading opportunities at home and at school can lead to important gains in emergent literacy development. Their investigation videotaped 130 children reading with an adult both at home and at school for a period of one year. The research concluded that shared book reading at

home and in preschool is important for young children's literacy development. The results of these studies indicate that storybook reading promotes children's language growth, emergent literacy and reading achievement.

Martins and Silva (2009) discovered that differences in children's literacy exposure while at home had a strong influence on how they performed in school. Currently, there are a number of factors that might contribute to children entering school with gaps in their literacy knowledge. One such factor can be the socio-economic standing of the child's family. A study conducted by the Literacy Skills Society made the connection between the family's economic standing, the parents' educational attainment, and the academic scores of their children (Statistics Canada, 1997). The findings revealed that children who are from lower socio-economic families have more difficulty achieving academic success. This lack of success could be attributed to the parents' lack of involvement with their children's education, although the specific reason for the decline in parental involvement is unclear. A research paper published by the Ontario Children's Secretariat in an *Early Years Report* revealed similar findings. The report stated that it is well known that a higher proportion of children in low-income families do not do well academically and socially as compared to children in high-income families (McCain & Mustard, 1999, 2002; McCain, Mustard, & Shanker, 2007).

Another factor that might influence early learning development is the parents' ability to serve as positive literacy role models for their children. Reasons for this could extend from the parents' fear of not being able to do the task, which leads to feeling embarrassment and shame. Another reason might stem from the parents'

negative learning experience as a result of a learning disability, or it could stem from the parents' lack of understanding regarding the importance of literacy within their lives. Many parents are unaware of how nurturing in the early years can have a direct impact on their children's capacity to learn (McCain & Mustard, 1999, 2002; McCain, Mustard, & Shanker, 2007). In a concluding statement, McCain and Mustard (2002) confirmed that "The first years of life are crucial in setting a good foundation for each child's future" (p. 57). A supportive family environment that encourages reading and learning will encourage higher academic achievement in the child. When this support is lacking within the family, the child may suffer academically. It becomes imperative that classroom's are adequately prepared and able to offer additional supportive shared reading experiences.

2.2.1.1 Acquisition of Oral Language Skills

The acquisition of language and its proficiency can be seen as a continuum. Hill (2008) commented that oral language has long been regarded as the foundation for beginning reading as children draw on meaning, syntax and the phonology of spoken language as a bridge to emergent reading. The acquisition of language usually begins with a building up of vocabulary, which is important as the child grapples to make sense of speech. Researchers in the field of communication disorders, educational psychology, and education, agree that a child's oral language predicts their literacy achievement and is a strong predictor of a child's later academic success (Lonigan, Burgess, Anthony, & Barker, 1998; Moody, Justice, & Cabell, 2010). Emergent readers need to have control over several aspects of their oral language

(phonology, vocabulary, syntax, discourse and pragmatics) prior to starting the reading process (Snow, Burns, & Griffin, 1998; Moody, Justice & Cabell, 2010).

Researchers Dickinson and Tabors (2002) conducted studies which revealed that the number of words in a child's vocabulary is strongly associated with learning to read and reading comprehension in later grades. Their study audiotaped children, their parents and the teacher in classroom and home situations examining what effects different home and preschool environments, and various combinations of home and preschool environments, had on these children's kindergarten skills and on their more long-term academic achievements. Their findings revealed young children's oral language vocabulary when enhanced through a range of shared reading experiences with an adult, strengthened reading acquisition which continues throughout their academic development. It therefore becomes important that children are supported with not only their emergent reading development but also with their oral language acquisition (Roberts, 2008).

2.2.1.2 Acquisition of Print Awareness

A number of studies have shown that the knowledge children possess regarding the conventions of print appear to be related to both emergent and conventional literacy skills (Morris, Bloodgood, Lomax, & Perney, 2003; Storch & Whitehurst, 2002; Wampole & Blamey, 2008). Researchers generally agree that print knowledge is an important first step in the acquisition of literacy skills (Senechal & LeFevre, 2002; Storch & Whitehurst, 2002; Lonigan, 2006). In previous studies Clay (1993; 2002) discussed that regular exposure to and modeling of the reading process

helps children become familiar with the conventions of print and the meaning it holds. She further found how books follow a specific set of visual conventions that children can understand even if they are unable to read. Such conventions are as follows: a) a book has a front and a back cover; b) inside the cover are pages; c) text proceeds from left to right and is read from top to bottom; d) illustrations and text are sometimes separated and use grammatical structures such as capitals and lower case letters along with punctuation.

It is therefore important that these conventions are highlighted when adults discuss books with children. Clay (1993; 2002) stressed that not only is it essential for adults to expose children to text through opportunities of shared reading and writing, but is also the key that will allow children to explore environmental print in the home and around the community.

2.2.1.3 Development of Phonological Awareness

Phonological awareness is an awareness of sounds in spoken words that are revealed by such abilities as rhyming, matching initial consonants, and counting the number of phonemes in spoken words. A correlational study conducted by Justice, Chow, Cappellini, Flanigan, and Colton (2003) has shown strong concurrent and predictive relations between phonological awareness and success in reading. These researchers examined the efficacy of an experimental emergent literacy intervention program for preschoolers experiencing a delay in phonological development. The children in this study received a total of twelve intervention sessions which were held twice weekly, each lasting thirty minutes. Each child was directly engaged in

activities promoting knowledge and attention of phonological features. The researchers found that children who participated in the study and who were most at risk displayed significant growth in both written language and phonological awareness. The researchers found that the growth was most noticeable in alphabet knowledge, phonological processing, and rhyme production.

2.3 Emergent Reading

Many children enter preschool with different experiences and skill sets and come from different family and cultural backgrounds. They have different likes and dislikes, a varying knowledge of books, and diverse reading experiences as well as writing and oral language skills (Martins & Silva, 2009). In order for children to experience success when learning to read, teachers need to understand where children are on the emergent continuum. By understanding each child's starting point, teachers are better able to present him/her with learning experiences designed to meet his/her individual reading needs. Placing a child's reading awareness on the continuum begins with the pre-conventional exploration of text between the ages of three and five. It is at this time that children begin to choose reading materials, show interest in signs, labels, and environmental print. These young readers are able to hold books properly, turn pages correctly and can identify parts of a story. They begin to identify some letters within the text, but have not made the connection between letters and words. As the child continues to develop their reading development moves towards emergent reading (usually occurring between four and six years old), which is when they demonstrate their eagerness to read. At this time, children will usually

retell the story in their own words using the illustrations as a guide and track text by moving from the top to bottom and from left to right. Students demonstrate their letter and sound knowledge and begin to recognize some high-frequency words. With guidance, children are able to make meaningful word predictions using strategies that support sounding out letters. They participate willingly in reading familiar books and poems and are making connections between books they have read and their own experiences.

2.3.1 Creation of Successful Reading Experiences

A research study conducted by Snow, Burns and Griffin (1998) identified children who experienced primary literacy development in early childhood, were more likely to experience reading success. In follow up research these children displayed continued motivation towards reading later on in their schooling. A question that arose from their findings was how can children who are disadvantaged and are not exposed to a print rich literacy environment in their homes during this crucial time of development be supported so they can experience success within their emergent reading acquisition? The answer, of course, is that there are many ways to offer this support. One way is to create a print-rich learning environment for emergent readers. Posters, word walls, and illustrations can create a stimulating learning environment. As well, in-class activities, such as read-a-louds, shared reading experiences, guided reading activities; independent reading times, synthetic phonics, and word study provide instruction that gives children the opportunity to experience and enjoy literacy learning. These activities offer children opportunities to practice

their skills and learn strategies that are necessary for developing reading fluency and comprehension.

2.3.1.1 Emergent Reading and Oral Language Skills

Becoming a reader is a continuous and ongoing process that begins with the early development of spoken language (Clay, 2002). To become a confident reader, a child needs to learn that the words we say are made up of different sounds. As a child grows, nurturing and exposure to a literacy-rich environment can teach the child how to read independently. Oral language is a key component to reading success, and it is almost always acquired at home where the child observes, listens, speaks, and interacts with others within his/her environment. Some children enter school with a well-developed sense of this awareness, while others need to begin building their knowledge and understanding right from the first day of school. While oral language is a process that occurs naturally, learning to read is not. If a learner comes to school not knowing how to read, he/she must be taught during the first years of school (Ontario Ministry of Education, 1998; 2003). A child's academic success depends on knowing how to read. The Ontario Ministry of Education (1998; 2003) identified that there is a critical window of opportunity which exists for children between the ages of four and seven to learn how to read. This report relays that children who successfully learn how to read during these primary years are capable of learning to read for study and for pleasure. It also highlights that children who struggle with reading in grades 1 through 3 remain at a serious disadvantage, and it becomes increasingly difficult for them to keep up with their peers. These children are likely to suffer low self-esteem

issues and may develop behavioral problems within the classroom if left unsupported (Ontario Ministry of Education, 1998; 2003). The goal, then, is to identify these students early on and provide them with reading opportunities that will help them to build successful reading skills.

2.3.1.2 Emergent Reading and Print Awareness

Whitehurst and Lonigan (2001) recognized that the alphabetic writing system and the decoding of print involves the translation of units of print into units of sound, and writing involves translating units of sound into units of print. At the most basic level, the task requires knowing the names of the letters and their corresponding sounds. An emergent reader who does not have a secure understanding of letters and sounds will have difficulty relating the sound to the correct letter making the decoding of text difficult (Lonigan, Schatschneider, & Westberg, 2008). Lonigan et al., (2008) reinforce the fact that having a strong knowledge of the alphabet when first beginning school is one of the strongest single predictors of a child's literacy success.

A report brought out by the National Early Literacy Panel (2008) addressed three stumbling blocks children encounter when learning to becoming a confident reader: (a) problems in understanding and using the alphabetic principle to acquire fluent and accurate word-reading skills; (b) the failure to acquire the verbal knowledge and strategies that are necessary for comprehension of written materials; and (c) the loss of motivation to read. Children can experience difficulties in learning to read for any of these reasons. The problem most consistently associated with serious reading disabilities involves children's difficulties in acquiring accurate and

fluent word-reading skills (Bruck, 1990; Torgensen, 2004). A widely cited study by Torgensen and Burgess (1998) examined the reading development and word-reading skills of four groups: (a) phonological awareness plus synthetic phonics; (b) embedded phonics; (c) regular classroom support, along with a control group; and (d) regular classroom intervention. These researchers concluded that, although the ultimate goal of good reading instruction is to provide children with all the skills they need to construct the meaning of the text, a significant goal is for them to acquire effective word level skills. They suggested that this can be achieved through the consistent and ongoing focus on word construction strategies that will contribute to a child's word-level awareness skills.

2.4 Emergent Reading and Phonological Awareness

In the 1970s, theorists suggested that for children to hear the sounds in spoken words they needed to learn how to map letter sounds onto speech sounds (Liberman, Shankweiler, Fischer, & Carter, 1974). That is, they had to learn how letters were connected to sounds and how those sounds were represented within the text. This was considered important because the sounds of spoken words are blended together to form a single acoustic unit that a child hears. The child needs to distinguish between the sounds in order to understand the word. This is difficult because the individual sounds in words are not readily apparent. However, twenty years later researchers now suggest that children who do not hear the sounds in words and who cannot segment a spoken word into its component sounds are prone to have difficulty in learning to read (Lonigan, Schatschneider, & Westberg, 2008; Sénéchal, 2006;

Whitehurst & Lonigan, 2001). The National Early Literacy Panel (2008) reported a total of 18 studies involving 2619 preschool and kindergarten children. These multivariate studies, included concurrent and longitudinal studies, and examined the relation between alphabet knowledge and spelling. The findings revealed that alphabet knowledge was a significant predictor of spelling even after controlling for age, oral language, phonological awareness, and IQ.

Other researchers such as Ehri (1998; 2005) and Martin and Silva (2009) have suggested that children learn through repeated exposure to letters and phonemes in spoken words and it is this exposure that determines a child's success in reading. It therefore becomes imperative that children, who are experiencing difficulty due to limited shared reading opportunities or who are having difficulty acquiring this skill set, are supported in acquiring a high degree of letter knowledge, including the ability to distinguish and identify the letters of the alphabet, and in acquiring a strong phonological awareness.

The research is clear. Children who begin school with strong oral print and phonological awareness have a real advantage in learning to read. Ideally, by the time children finish kindergarten, they should be familiar with books and other printed matter and they should be able to recognize and write most of the alphabet and speak their sounds. In school, print awareness must be continually stressed and reinforced through intentional literacy experiences throughout the day. As discussed earlier, researchers know that many children first demonstrate phonological awareness as preschoolers. They begin to recognize words as well as the meaning of words. It is during this time that they also become aware of how groups of sounds operate in

words within the spoken language and how these sounds can be manipulated. These individual sounds of language are known as phonemes.

2.4.1 Strategies for Developing Phonological Awareness

Ziolkowski and Goldstein (2008) define phonological awareness as sensitivity to the sound units of oral language, including the awareness of words in sentences, of syllables in words, of the beginning and end part of words and of phonemes. Phonological awareness is necessary in order to use phonic knowledge effectively in reading. Gunning (1995) discussed the importance of phonological awareness by stating,

> When students are encouraged to use these strategies they are more apt to look for pronounceable word parts. It is this ability to look inside words for syllables, rhymes and individual sounds when reading which defines the child's phonological awareness. (p. 484)

While Snow (2002) emphasized that the phonological skills of segmenting and blending are the most highly correlated with the early stages of reading acquisition. It is therefore important that these be fostered and developed at the beginning of kindergarten. In a study conducted by Ziolkowski and Goldstein (2008) which examined 13 at risk emergent readers, revealed that an explicit phonological intervention program which embedded repeated shared reading opportunities found that initial sound intervention enhanced children's alliteration and initial sound fluency skills. Researchers Ukrainetz, Nuspl, Wilkerson and Beddes (2011) in their study examined 39 four and five year old emergent readers. Their study conducted bi-

weekly small group instruction under three conditions: a) two weeks of syllable tasks then four weeks of multiple phoneme tasks; b) four weeks of multiple phoneme tasks only; and c) active control conditions of first phoneme instruction. The result revealed that the first two conditions demonstrated the greatest gains on blending and segmenting and no significant difference on phoneme blending and segmenting. This evidence suggests that emergent readers can improve their understanding of phoneme blending and segmenting, without first being taught syllables blending and segmenting and with no negative effects on first sound awareness.

Children with a developed understanding of phonological awareness have the framework in place for learning to read and write because they have learned the letter-to-sound correspondence (phonics). If a child lacks this alphabet knowledge they will experience trouble recognizing and distinguishing between the letters of the alphabet, and will have difficulty learning letter to sound correspondence which is the foundation for decoding and spelling. Children who have difficulty with phonological awareness can often learn phonics, but experience difficulty when applying what they have learned. It becomes important, then, that phonological awareness be well developed if students are expected to use letter-to-sound as a cuing system that teaches them how to read and spell (Torgesen, Al Otaiba, & Grek, 2005). They will find it difficult to use sound knowledge effectively because they will not have the underlying ability to listen to a word and play with the sounds they hear within that word.

2.4.1.1 Phonological Awareness and Phonics

Children with a developed understanding of phonological awareness have the framework in place for learning to read and write because they have learned the letter-to-sound correspondence. If a child lacks this alphabet knowledge they will experience trouble recognizing and distinguishing between the letters of the alphabet, and will have difficulty learning letter-to-sound correspondence which is the foundation for decoding and spelling. Children who have difficulty with phonological awareness can often learn phonics, but experience difficulty when applying what they have learned. It becomes important then, that phonological awareness be well developed if students are expected to use letter-to-sound as a cuing system that teaches them how to read and spell (Torgesen, Al Otaiba, & Grek, 2005). They will find it difficult to use sound knowledge effectively because they will not have the underlying ability to listen to a word and play with the sounds they hear within that word.

2.4.1.2 Phonics and Words Study

Research has shown that phonics and word study are valuable strategies for improving children's ability to recognize words and decode text (Cardoso-Martins, 2001; Ehri 2005; Yopp & Yopp, 2000). Phonics is a systematic instructional approach that links the foundation of phonemic awareness to children's growing knowledge of the letter–to-sound relationship. Instruction begins with common letter–to-sound relationships and progresses to more complex spelling patterns, blends, segments of words, and syllables. To appreciate the usefulness of this letter-to-sound relationship,

children require planned sequential and authentic learning experiences that reinforce their knowledge and understanding (Ukrainetz, Cooney, Dyer, Kysar, & Harris, 2000; Ukrainetz, Ross & Harm, 2009). By the end of kindergarten, given sufficient instruction and practice, students should be confident in (a) isolating the beginning sounds of a word (example: /c/ /at/); (b) blending three sounds to make a word (example: /d/ /o/ /g/); (c) segmenting a word into its onset and rime (example: saying the word /p/ /op/ the student recognizes the word as /pop/; and (d) changing a sound in a word to make a new word. (Using the onset and rime of /pop/ remove the initial letter sound /p/ and replace it with another letter creating a new word from the new sounds /t/ /op/, /sh/ /op/, /st/ /op/) (Torgesen, Al Otaiba, & Grek, 2005).

Word study is also an important component for emergent readers. The terms 'word study' and 'high-frequency word recall' refer to those words most commonly seen in a text by emergent and early readers. Emergent readers need additional opportunities to practice high-frequency words found in texts, so that recall becomes automatic. When children have this familiarity with high-frequency words, they are able to focus on supporting themselves with word-solving strategies, so they can read partially familiar or unfamiliar words. The purpose of word study is to improve the child's ability to decode words independently, which is important for fluency and comprehension.

2.4.1.3 Emergent Reading and Phonics

Strickland (1998) noted in her book *Teaching Phonics Today* that young children make use of cuing strategies from a very early age. She pointed out that,

although children are able to use semantic and syntactic cues, there still is a need for them to develop letter-to-sound relationships. Children who are learning to read will use their knowledge of oral language, personal experiences, and understanding of print and pictures to understand the message within text. By the time a child enters first grade, he/she should have attained a high degree of control over his/her oral language. Strickland (1998) was emphatic in her discussion that a child's knowledge of oral language may be the most important thing he/she can bring to the task of learning to read. A strong command of oral language serves as a foundation for learning the many conventions and features of the printed language.

2.4.1.4 Decoding Strategies

According to Hindman et al. (2008) fluent reading involves two fundamental processes: decoding (translation of written symbols into spoken words) and meaning making (construction of the conceptual significance of a string of words). Research conducted by Hindman et al.(2008) found that most children begin to develop these processes (decoding and meaning making) around six or seven years of age, but gain important precursor skills throughout early childhood. These researchers state although some children can acquire some decoding knowledge through personal experiences much of the learning is grounded in exchanges with adults. Children with limited oral language skills and personal experiences require additional support through a rich and stimulating reading environment. This will allow them to make their own meaningful connections through print and illustrations. Children who enter

school with good oral language skills and prior reading experiences will have greater success using strategies that unravel the print code on pages.

During the emergent reading phase two of the earliest decoding strategies an emergent reader will use are picture cuing and configuration cuing. Picture cuing allows the child to make a connection between what is happening in the picture and what is in the printed word by offering clues as to which word might be the right word. Configuration cuing draws the attention of the reader to unusual letter patterns in text, which might help him/her to remember the word. These types of strategies are designed for beginning readers and are meant for short-term use (Strickland, 1998). As children move along the emergent reading continuum and approach reading in a more formal way, they gain knowledge of more developed strategies.

2.5 Computer Assisted Learning

With the introduction of computer technology in the classroom, new horizons for educators and researchers have opened as they examine innovative tools designed to support the emergent reader (Shamir & Shlafer, 2011). Before the age of computers a child's initial reading experience came from either a parent or classroom teacher. Hezroni (2004) relayed that although conventional shared reading continues to be the most engaging and motivating context for the acquisition of emergent literacy reading skills, computer based e-books (digital versions of conventional texts) has placed a potentially effective tool in the hands of both parents and educators.

A CAL environment places a strong emphasis on student-centered materials encouraging the learner to work independently. These learning materials may be structured or unstructured, but normally embody two important features: they are interactive and individualized. CAL is essentially a learning environment that helps teachers facilitate the learning process. This learning tool is designed to be interactive, illustrating concepts through alternative animation, sounds and demonstrations. Students are supported through self-paced activities which can be easily differentiated and offer the user immediate feedback. This type of learning environment engages the students capturing their attention and reading focus (Moody, Justice, & Cabell, 2010). Teachers are becoming increasingly interested in the use of CAL environments to support emergent readers especially those children who are at risk of reading failure. An example of an application which is supported within a CAL environment is the e-book. Zucker, Moody and McKenna (2009) relayed the minimum definition of an e-book requires text presented on a computer with an oral reading option (known as text-to-speech) and some form of hypermedia (e.g., embedded images, sounds, video animations and so on). Moody, Justice and Cabell (2010), however, view an e-book as a digital version of a conventional paper based text book that offers young children an opportunity to explore reading with the support provided through animations, narration and interactive options. Segal-Drori, Korat, Shamir and Klein (2010) refer to e-books as 'living books' due to their animated features which bring stories to life for the emergent reader. Wood (2005) discusses features such as dynamic illustrations, interactive features, and voice-over narration as components that stimulate the young reader's willingness to participate in

the reading experience. Researchers such as Korat (2010) and Korat and Shamir (2004, 2007, 2008) cautioned that many e-books commercially available emphasize multimedia, colors, sounds and graphics, and are not necessarily suitable for promoting young children's language and literacy skills. Although this type of dynamic reading experience provides children with additional opportunities to explore reading texts, it is different from sitting with a parent sharing storybooks together (Korat, 2010; Roskos, Brueck, & Widman, 2009; Segal-Drori, Korat, Shamir, & Klein 2010). In a recent study, Labbo (2009) found how oral language can be fostered and developed into rich conversations through the use of repeated reading of the same e-book. Features such as strategic navigation and hotspots allow the reader to revisit the same text while making new discoveries within the text itself. Another important factor mentioned by Rosko, Brueck, and Widman (2009) examined the effects on children's emerging literacy concepts and skill development, discussing what it will mean for literacy development in a digital age. These researchers discuss the importance of supporting children's first reading experiences with a variety of traditional shared reading experiences and new digital reading opportunities. It is this type of shared experience which develops reading strategies allowing them to negotiate their reading environment (Hassett, 2006). An example of this is the use of fine motor skills needed for the turning pages in a paper text (grasp, lift, place) and the hand-eye coordination of the mouse point and click needed to navigate a digital text (track, move, point, click). E-books have the potential to offer children multiple and varied reading opportunities to explore text both independently and through teacher support.

Previous research on the efficacy of commercially available e-books among kindergarteners is limited, with many studies focusing on the effects on story understanding (De Jong & Bus, 2002, 2003; Moody, Justice, & Cabell, 2010). More recently, there is a resurgence of investigative research being conducted examining emergent literacy skills such as oral language, phonological awareness, word recognition, print concepts and story comprehension (Korat & Shamir, 2007, 2008; McKenna, Reinking, & Bradley, 2003; Segers, Takke, & Verhoeven 2004; Shamir, Korat, & Barbi, 2008). There is growing evidence that e-books are being used within classrooms in an effort to support emergent reading development (Hezroni, 2004; Snyder, 2002; Zucker, Moody, & McKenna, 2009). These digital versions of conventional reading books, encourages emergent readers to read stories independently through the use of embedded supportive features such as animations and narrator support. This is particularly important for the early year's learner whose emergent literacy skills might get a much-needed boost from the use of digital reading media both in their preschool years as well as in elementary school. Despite the growing popularity and use of e-books in the classrooms, there remains a lack of empirical evidence to support the extent to which e-books help emergent readers develop decoding strategies (Neuman, 2009; Shamir, Korat, & Barbi, 2008; Underwood & Underwood, 1998). It is therefore the intention of this study to provide research focus within this area.

2.5.1 Characteristics of Electronic Books

Early educational reading experiences provide children with opportunities to develop foundational skills which will in turn transform into school success later on (Burgess, Hecht, & Lonigan, 2002; Korat, Bachar, & Snapir, 2003; McCardle, Scarborough, & Catts, 2001; Shatil, Share, & Levin, 2001). In an effort to develop early intervention reading programs, many researchers recognized the potential role technology can play in improving emergent literacy skills. Shamir and Shlafer (2011) using the theories of Mayer and Moreno (2003), Eshet-Alkalai (2004), Moreno and Duran (2004) and Neuman (2009) discussed that conventional books transmit a story's meaning through static and visual media (printed text and fixed pictures) while e-books are able to tell stories through dynamic audio-visual elements (text and pictures linked with animated visuals and auditory elements story narration, animation, music, and character interaction). These theories highlight the growing trend towards how children are using a multi-sensory approach when they are learning how to read (Neuman, 2009).

The use of e-books can be a form of assistive technology with the potential to support young and struggling readers by helping them learn to read independently. It is therefore possible that additional opportunities to explore e-books could foster the development of children's foundational reading skills. Moreno and Duran (2004) relayed that e-books can provide digital scaffolding support such as picture cuing and read-aloud options that enhance comprehension. Shamir and Korat (2009) reported that e-books can offer the emergent reader opportunities to strengthen their word

pronunciation that in turn strengthens their phonological awareness and their skills for decoding text.

Although e-books have within them the potential to support emergent readers recent research suggests there are a number of limitations. For example, Shamir, Korat and Barbi (2008) noted in their research that the very features that were designed to arouse curiosity and motivation (such as multimedia options that children could activate themselves), encouraged passive reading, delayed comprehension of the main theme, and interfered with the drawing of conclusions rendering the e-book reading activity more for amusement than for purposeful reading. Researchers today suggest that the use of commercially available e-books, designed to support emergent readers, be carefully chosen ensuring digital features contained within the e-book will meet the needs of young readers (De Jong & Bus, 2003; Shamir & Korat, 2006; Shamir, Korat & Barbi, 2008). A well-designed e-book includes elements that promote children's phonological awareness, expand their alphabetic understanding, and contribute to their oral and written language skills (Chera & Wood, 2003; Shamir, 2009; Shamir & Korat, 2009). These types of elements have the potential to advance the reader's literacy development by focusing on specific elements that promote word and letter recognition, build vocabulary and comprehension skills, and motivate continued learning (Sergers & Vermer, 2008).

2.5.2 Electronic Books, Reading Engagement and Oral Language

Researchers McWilliam, Scarborough, and Kim (2003) revealed students' who read e-books were more attentive during independent reading sessions,

participated in oral discussions and were able to answer comprehension questions. An example of this engagement behavior was observed in a study conducted by Verhallen, Bus, and De Jong (2006). This study examined conventional texts against e-books with five-year-old emergent readers. The results revealed that children who used e-books demonstrated improvement in areas of oral vocabulary and comprehension as compared to those children using conventional paper-based text. Earlier research conducted by Talley, Lancy and Lee (1997) revealed similar findings. Their study examined two groups of four-year-old children. The first group was composed of children with previous reading experience, while the second group consisted of children who had limited exposure to reading experience. The results revealed that both groups of children demonstrated positive results in emergent reading particularly in their oral language development and reading attitudes. These examples demonstrate how modifying the format of reading material can affect students' oral language, comprehension, sustained reading engagement, enthusiasm, and reading independence.

2.5.3 Differentiating Conventional and Digital Print

Studies such as Plowman and Stephen (2003; 2005; 2007) and van Kleeck (2003) confirmed that computer assisted technology such as e-books promote children's language and literacy development. These researchers identified four key reasons why children might experience success using this type of reading tool: (a) it offers students the opportunity to take control over their learning and allows them to set their own pace; (b) it offers instant feedback to the user and encourages self-

checking; (c) it offers students a chance to maintain focus and to pay attention to the reading task; and (d) offers the choice to break reading into smaller components, which supports emergent readers. More recently, researchers such as Zucker, Justice and Piasta (2009) have considered, for instance, whether design features of storybooks, including illustrations and conventional printed text, affects the nature of adult-child book reading interactions. Their study analyzed the language contained within text and how it impacted on the types of questions teachers use during shared reading times. The findings revealed that preschool teachers were less likely to use inferential questions when the text contained basic vocabulary. These researchers concluded by stating that higher level conversations may occur more easily when reading books that contain more sophisticated language. On the other hand, Anderson-Inman and Horney (2007) examined the effect book features have on both conventional and e-books formats. They explain that electronic formats of texts can support one or more reading processes and allows users to understand text that would otherwise be too difficult for them. Stanovich (1993) detailed that if children lack the proficiency in one area such as decoding, they typically attempt to compensate by using other cognitive processes. This comes at a cost as resources which would normally be devoted to addressing the initial decoding problem, are expended in other areas which ultimately affect comprehension. McKenna and Zucker (2009) suggest that e-book features should be flexible enough so they are able to align to the individual needs of each learner. This statement echoes the need for reading material to be available for emergent readers in a variety of formats. In this way, teachers are more able to support all readers. The e-book can be a form of assistive technology

with the potential to support young and struggling readers by helping them read independently. It is therefore possible that a child's foundational reading skills could be developed by providing additional reading opportunities through e-books.

This literature review does not suggest that emergent literacy can be promoted by e-books alone, it can however be supported through a combination of adult teaching and technology that encourages emergent reading. While e-books cannot take the place of an adult reading to a child, this form of computer assisted learning does offer a host of benefits for the emergent reader (McKenna and Zucker, 2009). For example, e-books can:

- Create a learning environment where a child can be read to out loud through an narrator's voice;

- Encourage the child to interact with the graphics to see how they match the text;

- Help the child to see print conventions that are being reinforced in the classroom (such as onset and rime in word recognition);

- Foster independence and exploration (which are important to the development of an emergent reader); and

- Foster success and enjoyment in the reading process because the child comes to see her/himself as a reader.

These integral elements of CAL technology can support a child through his/her emergent reading phase. The aforementioned benefits make it an innovative text based reading alternative.

2.5.4 Supporting Phonological Awareness in a CAL Environment

Researchers such as Moody, Justice and Cabell (2010) have studied what children do in their leisure time and they have identified new ways of teaching based on what children find interesting. Today, children from an early age are proficient users of technology outside of the classroom. The US National Center for Education Statistics (2003) suggests that 75 percent of school-aged children use a home computer, and approximately 83 percent of these children reported using computers at school. Although research on the effectiveness of e-books is scarce it has shown promising results in the area of comprehension and word recognition skills. There however remains limited research data available examining the effectiveness on phonological awareness (De Jong & Bus 2002; Lewin, 2009). For example, researchers Chera and Wood (2003) found that kindergartners who were given the opportunity to participate in a four week reading program supporting the use of e-books were found to have improved phonological and verbal understanding compared to the control group. Korat and Shamir (2008), in their article, voiced concern regarding the quality of some of the educational e-books available. These researchers reported only 28 percent of the e-books examined encouraged children to follow along with the narrator and offered the reader support and strategy options when decoding and sounding out unfamiliar words.

2.6 Conclusion

To summarize, this literature review presented how e-books can be used to support emergent reading development. The importance of reading skills that children

acquire while at home cannot be underestimated as it is this time which provides a foundation for their later reading success. Studies such as De Jong and Bus (2002) and Whitehurst and Lonigan (2001) confirm the importance of early exposure to reading experiences and the role the parent/adult plays in emergent reading development. How e-books support new basic skills for reading is of high interest. E-books afford opportunities for lots of independent practice and exploration, more than adults can supply, especially in early learning classrooms (Rosko, Brueck, & Widman, 2009). Hezroni (2004) relayed that although conventional paper based texts continue to play an important role within home and school reading programs, computer based e-books are being used with greater frequency. This learning tool is designed to be interactive, illustrating concepts through alternative animations, sounds and demonstrations. By using e-books within the learning environment students can use self-paced activities which can be easily differentiated offering immediate feedback. Teachers are becoming increasingly interested in the use of computer assisted learning environments to support emergent readers especially those who are at risk of reading failure. There is growing evidence that e-books are being used within classrooms in an effort to support emergent reading particularly in the area of phonological awareness, word recognition, print concepts and story comprehension. The digital version of a text encourages emergent readers to read independently through supportive features. By using a multi-sensory approach which can be provided through e-books, early educational experiences can be transformed into educational success later on.

Although e-books have within them the potential to support emergent readers, there are a number of limitations. Shamir, Korat and Barbi (2008) noted that some of the features that were designed to arouse and motivate readers, only encouraged passive reading, delayed comprehension and interfered with comprehension. Researchers today suggest e-books which are commercially available be carefully chosen ensuring digital features meet the needs of the young readers. Well-designed e-books include elements that promote phonological awareness, expand alphabetic understanding and contribute to oral and written language skills. Sergers and Vermer (2008) stress this type of resource carries with it the potential to foster word and letter recognition, strengthen vocabulary, improve comprehension skills and motivate the emergent reader. The e-book can offer emergent readers additional opportunities to read independently through in-built supportive features designed to foster knowledge and reading understanding along with strategy development. In the following chapter the research design and method will be discussed.

Chapter Three: Research Design and Method

3.1 Introduction

The purpose of this chapter is to outline and discuss the research methodology and explain why it was appropriate for this research study. In addition to presenting the rationale for using action research, the context with which it was applied will also be discussed. The school's demographics, data collection methods and sample selection will be presented concluding with a discussion on how the integrity of the study was maintained.

3.2 Broader Paradigm

Merriam (2009) explained qualitative research as understanding how people interpret experiences, how they construct their worlds, and the meaning they attribute to them. Using the applied approach to qualitative research helped me develop insight into a recurring problem within my classroom affecting the development of emergent readers. As I also wanted to address a particular localized problem of improving students use of reading strategies, the type of applied research I chose to follow was that of action research. The goal of action research is to address a specific problem, improve practice within a specific setting. Bogdan and Biklen (2007) suggests, while some training in research is helpful, action research is conducted by people, in real world situations, in practical solutions to problems and in creating positive change. Using this research method would support positive change to occur within the classroom.

3.3 Action Research

Action research is 'research in action' or 'learning by doing' and is used by teacher-researchers to investigate relevant classroom problems through a step-by-step inquiry process (Mills, 2011). Goodnough (2011) discussed this form of research as 'insider research' or research conducted by individuals who are directly involved in the situation. These participants take action to improve their own practice through developing personal and professional understanding while solving a problem (p. 5). Its purpose becomes to improve personal and/or professional practice, solve problems, and facilitate change through a naturalistic approach using participant observations to investigate the phenomenon (Cohen, Manion, & Morrison, 2007). As a result teacher-researchers engage in ongoing reflective practice. This practice follows a cycle of identifying a problem, formulating a plan, carrying out research, reflecting and evaluating the action taken (also known as *the action research cycle*) (McNiff, 2002).

3.3.1 Theoretical Perspectives

For this study, three distinctive theoretical perspectives were examined. These reflect the various purposes and theoretical foundations of action research. The models I chose to reflect on were: (a) critical action research; (b) practical action research; and (c) a three-dimensional perspective supported by Rearick and Feldman (1999).

The use of critical theory draws heavily on the notion of postmodernism and argues that truth is relative, conditional, situational, and that knowledge is an

outgrowth of previous experience. This type of perspective addresses many of the concerns about research that challenges assumptions and presents truths based on research conducted in one's own classroom (Kemmis & McTaggart, 2005). While critical action research has been criticized for its lack of practical feasibility (Mills, 2006; 2011), practical action research places more emphasis on the teacher-researcher as determining the nature of the investigation and having a desire to systematically reflect on practice (Calhoun, 2002; Mills, 2006; 2011). Practical action research assumes that as decision-makers, teacher-researchers will focus on areas of interest, determine methods of collecting data, analyze and interpret data, and develop plans of action based on the findings. This type of research is broken into the types of stakeholders involved, such as individual research, collaborative and school wide. Individual action research is conducted by the teacher within her/his own classroom. The teacher examines a particular area using the action research cycle to monitor the effects of change. Collaborative action research on the other hand is based on groups of teachers coming together to support one another to resolve a common problem. The objective of this type of research is to raise standards within a certain group. Finally, school-wide action research involves all members of the school and focuses on school improvement. When examining my study through the lens of Calhoun's (2002) practical action research guide, this research would be classified as *individual in nature* based on a desire to reflect on my personal and professional practice in order to improve emergent reading within my class.

An additional theory of interest was presented by Rearick and Feldman (1999) and proposed action research as a 'process' located within a dynamic three

dimensional space, the dimensions being: the purpose of the research, the theoretical orientation, and the type of reflection.

Rearick and Feldman (1999) discuss the *purpose* of action research to include professional understanding, personal growth and political empowerment. Professional development is seen as adding to the knowledge base of teaching and leads to shared knowledge and improvements within the curriculum. Unlike professional purpose, the personal purpose seeks to develop one's own knowledge base while the political purpose seeks to examine teachers' work and workplace and the advancement of social agendas. Reflecting on where I would place myself during this investigation, I initially situated myself towards the personal as I was looking to develop my own understanding of emergent literacy. As the study progressed, I found I had moved more towards professional development. My interests had grown to include sharing my findings with colleagues and professional associates, and developing curriculum that met the unique needs of these emergent readers.

Along the *theoretical orientation* are found the technical, practical and emancipatory perspectives. The technical orientation looks to govern human situations through rules based on empirical laws. Practical orientation recognizes that problems which occur can be solved through deliberate and interpretive modifications and centers around meaning making in a situation. The emancipatory orientation is said to arise from a critical perspective that seeks to uncover social structures which limit freedom. When examining my theoretical orientation, my study was practical in nature. Using a deliberate reflective process through the action research cycle, I was able to examine and reflect on my instructional approaches and strategies.

The third dimension involves the type of *reflections* that occur within action research. In autobiographical reflections, the researcher seeks to examine the literal meaning of actions, and stories. Collaborative reflections involve the sharing of personal theories and looks to extend one's own understanding with that of others. The final type of reflection is political in nature. It involves dialogue from invested parties addressing questions surrounding social justice. To situate myself along the reflection continuum, I used the autobiographical approach throughout the study. Using this method allowed me to acknowledge the bias in my approaches, and develop methods of collecting data which would be authentic and meaningful. It was not until the end of the data collection and analysis process that I moved towards the collaborative reflection. Collaborative reflection, according to Rearick and Feldman (1999), encourages the researcher to look beyond him/herself to gain answers. It is this openness to understanding the perspectives of others that moves these researchers to problem-solve within a community. These researchers relay that communal reflection helps the action researcher to better understand the perceptions, values, and deeper meaning that directs social action. The teacher-researcher who undertakes communal reflection gains understanding through examining the past, the traditions, and the values of the community. The process of seeking out advice, sharing findings, discussing possible solutions, helped my colleagues and I to uncover a deep rooted problem within our current reading program. Areas which were a concern to me were also a concern to others within our school.

3.3.2 Process of Developing a Research Methodology

There are many processes and guidelines that have been developed over the years in relation to action research. Lewin (1952) provided action researchers with the first model of a spiralling research process that included identification of a problem, exploration, planning, and its implementation. Kemmis and McTaggart (1988; 2005) created one of the best known research processes for action research based on Lewin's (1952) model of the action research spiral. Kemmis' and McTaggart's (1988; 2005) spiralling model includes the essential characteristics of exploration, planning, first action step, monitoring, reflecting, rethinking, and evaluation. Calhoun (2002) on the other hand describes her process as a cycle rather than a spiral. Her process includes selecting a problem of collective interest, collecting the data, organizing it, analyzing and interpreting it, and taking action. These process models, whether cyclical or spiralling, are consistent in that they identify a problem area, collect data, and examine it through data analysis and data interpretation, and re-evaluate the next action by fostering an ongoing action research process.

A recurrent problem was identified within my emergent readers relating to limited home reading experiences. In order to offer these children additional reading experiences, I would need to read with them. Without this daily classroom reading support these children were falling behind as emergent readers. Inspired by the desire to facilitate additional reading opportunities for all students, I needed to enhance my professional understanding regarding how to achieve this. I looked for a research model that would allow me to continually revisit and explore questions I had about

the ways students learn to read. Using a qualitative approach to data collection focusing on field notes with detailed observations, transcribed conversations, reflective journals and work samples, I was able to develop measures suited to my particular needs and design tests to validate my research question. Initially, I was the primary audience for the research study but if these findings were to be published, they could assist other teachers who are investigating a problem similar to mine. As this is an individual action research study, I continually endeavoured to discuss my work with coworkers and colleagues in hopes of drawing them into the research process.

3.4 Description of the Context

This section will discuss the school/class demographics, including a description of the school, the classroom, and the children. I will highlight the inclusion criteria used in selecting the participants, who the final participants were, and then discuss the materials used within this study.

3.4.1 School Demographics

The study took place during term three of the 2009 school year, in an elementary school located in a remote community in northern Ontario. Moosonee Public School (MPS) is a provincially funded public school offering programs from early education (Early Learning Kindergarten) through intermediate (Grade Eight). MPS is an over-subscribed school with two hundred and seventy five students. The majority of children come from Cree-speaking homes. An important factor which

shapes this study is the delay in oral language development among the students. Although Cree is the predominant language spoken at home between adults, the children are exposed to a mixture of broken English and Cree. Children who begin school arrive with undeveloped oral language skills and are developmentally delayed in a number of key early educational areas, such as print awareness, knowing the alphabet, and letter-to-sound understanding.

The staff at MSP consists of thirteen classroom teachers, nine support staff, two special education teachers, as well, two teachers who specialize in language instruction (French and Cree). These teachers are a dynamic group of individuals who strive to provide the best educational experience for their students. The school board is supportive and eager to help staff and students facilitate educational change, and, as a result, the school is well resourced.

The student population consisted of twenty-six aboriginal Senior Kindergarten students who attended our full-day program. At the time of the study, our class had access to a variety of reading resources in a variety of formats, an interactive white board, four computers, two cassette players, a compact disk player, and a television/digital video display unit.

3.4.2 Research Set-Up

In setting the parameters of the study, I chose to examine children who were five and a half years old and were at risk due to poor performance on the DRA. When choosing participation criteria children were required to have a basic understanding of book conventions, recall all the letters and sounds of the alphabet, and identify five

high-frequency words from the Dolch High Frequency Word List. Each participant would require good computer skills as this study would be relying on computer navigation needed to engage in reading the e-books.

3.4.2.1 Student Involvement

When considering the student selection, eighteen children were identified as possible participants based on their age of five and a half. From the remaining eighteen children, those who were early readers or early emergent readers and were reading at a DRA age of Level A or below, or Level 4 and above were excluded. Ten students remained. Of the ten students remaining, letter and phonemic awareness was examined next. Eight students were able to recall their phonic sounds and identify the letters of the alphabet. Next, I examined high-frequency word awareness, after which five students remained. The final criterion was the student's computer skills. Due to one student's limited computer skills, four students were chosen to participate. A formal invitation to participate in the study was made to both the child and their parent and the school board (see Appendices A & B). The parent and their child were informed that participation was voluntary and were free to withdraw from the study at any time. After the parents had given consent for their children to participate, the children were formally invited to participate and were asked to sign a student consent form (see Appendices C & D). Each question was discussed with the participant and the parent, and emphasis was placed on the fact that his/her participation was voluntary. All four children and their parents agreed to become participants in this study.

3.4.2.2 Data Collection and Sources

In this section, the methods of data collection will be discussed along with the sources/resources used within the study. As I planned the types of data sources that would be used within this action research study, I followed a triangulation method to outline the various sources of data (Merriam, 2009) that I would use to answer each research question. Qualitative research relies on descriptive and narrative data sources, thus its strength lies in collecting information in as many ways as possible rather than relying solely on one method (Wolcott, 2005). Wolcott (2005) also noted that data collection begins when the teacher-researcher notices and documents an observation. It is a technique used to record observations, interviews, documents and artifacts.

Mills (2011) suggested that teachers who undertake action research have countless opportunities to *observe* their students in their own classrooms. Using field notes is one way. Field notes are not interpretations of what is happening, but rather a method of capturing what is occurring without commenting on why the action might have occurred (Dana & Yendol-Silva, 2003). Since teaching in a classroom of active kindergarten students, I would need to use a method of data collection that fit into my normal routine. One of the methods I used to document events was through field notes. The *field notebook* helped me to strive to be as *objective* as possible. The information collected from the field notes were used to guide subsequent observations of and *interviews* I had with the student participants.

In addition to the objective information collected through field notes, I used *group interviews* to collect viewpoints and assess the children's shared understanding. Using group interviewing is a way to gain insight into what students remember and how they are applying their understanding (Dana & Yendol-Silva, 2003). The interview sessions were held at the end of the week on Friday, for ten-to-fifteen minutes, in an informal setting. It was at this time participants came together and were encouraged through open-ended supportive questioning to share and discuss work samples they included in their portfolio. These conversations were recorded and later transcribed for further evaluation.

Another method used to collect data was through *reflective journaling*. Dana and Yendol-Silva (2003) discussed how the act of journaling can help capture the thinking that is taking place. Journaling provided me with an opportunity to reflect not only on what I was thinking and teaching, but also on what the child was thinking. Although the field notes offered an objective viewpoint of the actions as they took place, journaling presented an opportunity to document feelings and perceptions. During their weekly group interviews the students referred to their journals to display their thoughts, feelings, and perceptions surrounding their learning how to read. As with the student participants, my *reflective journaling* became a place where I could deconstruct my ideas and evaluate my next steps.

Additional data collection resources used within this study took the form of *video/audio tapes, Camtasia video files/photographs, and student personal artifacts kept in their learning portfolio.* Artifacts were child selected documents that related to the researcher's *'wonderings'*. For example, this study used both video and audio

tapes. Both sources provided a rich source of data that were reviewed and interpreted after the event had taken place, while the artifacts provided both visual and written sources of that data that contribute to an understanding of what was happening in the classroom. The learning portfolio included high-frequency word cards, a laminated cuing strategy card, finger-following guide, pointer, and a file folder for the student's work. The contents of the file folders provided me with valuable outcome data, allowing glimpses into how students were translating their understanding of how they were learning to read.

3.4.2.3 Materials Used

This section will describe the materials used within the study. The computer consisted of a standard laptop with an external mouse. A combined external headset and microphone set were used to record the children's conversations. An on-screen assessment tool, called *Camtasia*, was used to record the children's on-screen mouse movements and captured their voice as they read the story out loud. The Camtasia file could be easily saved and stored in the child's personal file folder on the computer for future review. Figure 1 is a screen shot of a student reading an ORT e-book. Students' onscreen mouse movements were recorded using the Camtasia software. In this photo, the student uses the 'click on the word' feature (highlighting the word in red) while the narrator reads the word back to the student.

Figure 1: Student 1's on-screen recording.

As discussed above, the e-books used for this study were from the ORT series (see Figure 2). The *Stage 1 and 1+* CD-ROM readers feature eighteen e-book stories with associated activities. The *Stage 2* series is composed of twelve e-books with activities that encourage word identification and story sequencing practice. Of note, children have access to the paperback version of the ORT CD-ROM series. The ORT software is designed to support the emergent reader develop his/her reading skills. The program features 'help icons' that allow the student to choose from a selection of strategies. The supportive strategies range from single word narration, whole sentence support, hot spots 'on screen' animation which supports context cues for the students to use (Oxford University Press, 2004).
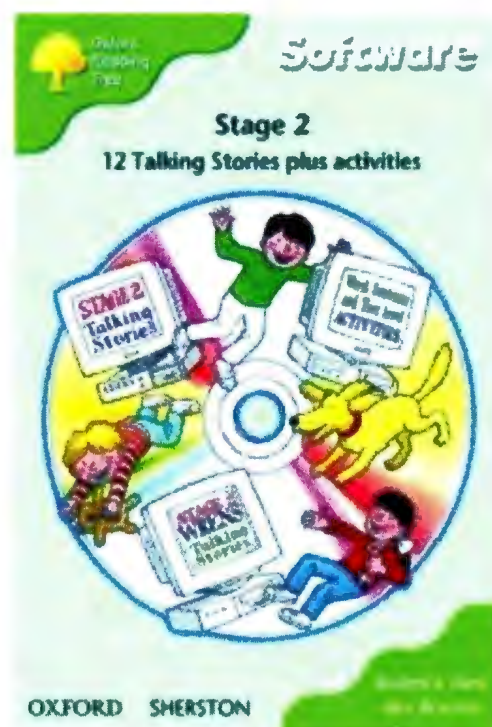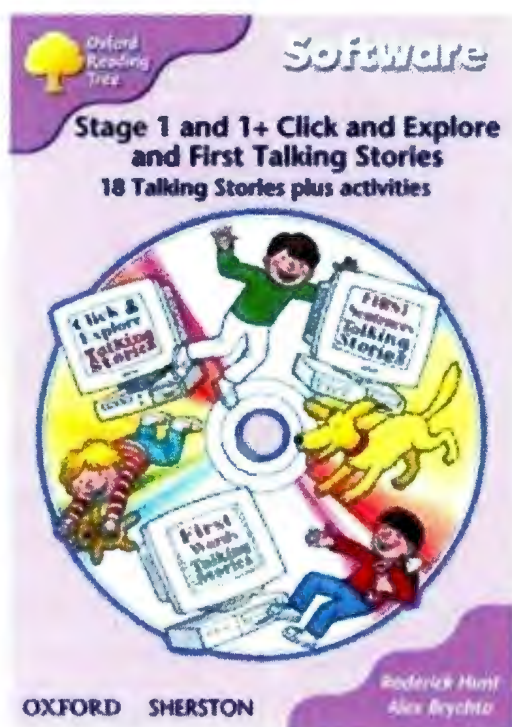
Figure 2: Oxford Reading Tree software: *Stage 1 and 1+* and *Stage 2*.

An additional resource used in this study consisted of a laminated cuing strategy card. This card offered students a visual reminder of strategies to follow when reading and decoding words (see Figure 3). Copies of these cards were placed near the computer for easy access and were included in each student's learning portfolio. Children were encouraged to use these cards as a reading and decoding resource in addition to using the help features of the e-book.
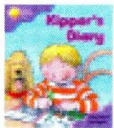
Strategy Card

1	Look at the picture
2	Look for words you know
3	Finger follow
4	/c//at/ First sound
5	/c//at/ Onset and rime

Figure 3: Cuing strategy card used to support emergent readers.

After each computer session, children were given the opportunity to document their experience through a variety of play-based activities. This debriefing time encouraged them to document their experiences by using materials such as crayons, pencils, markers, paints, pastels, and sugar paper, scissors and glue. Their creations ranged from simple drawings, writing in their journals, illustrating stories, and working on art projects. Students were encouraged to explore new ways of presenting their new

reading skills. This was demonstrated when students asked for access to additional computer software (such as *2Create A Story* by 2Simple Software and *The Bamboo Artist Drawing Pad*) to further illustrate their experiences. Students preferred to have a variety of methods when displaying their new understanding.

This example of a portfolio (see Figure 4) contains a variety of resources used to support Student 3's learning. Resources inside the box included high-frequency word cards, a laminated cuing strategy card, a finger-following guide, pointer, and a file folder for the student's work.

Figure 4: Student 3's learning portfolio.

3.5 Ensuring Quality in Action Research

Maxwell (2005) emphasized that one challenge consistently facing researchers is how to assure the quality and trustworthiness of their research. Merriam (2009) recalled that all research is concerned with producing valid and reliable knowledge in an ethical manner. The quality of research needs to be argued and justified against established criteria. Without this method of validation, researchers open their research to criticism. Lincoln and Guba (1985) argued that trustworthiness within research can be established by addressing the following criteria: credibility, transferability, dependability, and confirm ability. The following four sections will address recommended criteria and discuss the methods I used to ensure that I met these within my study.

3.5.1 Credibility of the Data

When reflecting on what makes data credible, Merriam (2009) wrote:

Though qualitative research can never capture an objective 'truth' or 'reality', there are a number of strategies that qualitative researchers can use to increase the "credibility of the findings. (p. 215).

Wolcott (2005) writes that it is through increasing the correspondence between research and the real world, that credibility is created. This correspondence can take the form of reflective journal, field notes, interviews, or artifact collections. Merriam (2009) discussed one of the best known strategies used to verify data is triangulation. When examining the method used within my study, I chose multiple methods of data collection. An example of this was when interviews were conducted.

The information obtained from sources such as artifacts, the reflective journal and field notes were checked against observations made. Therefore the credibility of the data through the process of triangulation was maintained through the interview, observations and documentation process. Using this method within my research, I initially began monitoring the participants' emergent reading over the course of an academic year. This was done as a way to track interventions and their effects. When the study began I continued using this method of recording events. This chronicling of events and interventions provided me with a rich and detailed description of the activities as they happened. I was then able to use the data to note themes as they emerged, monitor strategies that were used, and plan future interventions. To augment the data that was collected within the field notes, I also recorded the students' computer sessions using Camtasia. This program allowed for the students' on-screen work to be recorded along with their conversations. These recordings were then transcribed and used for evaluation purposes. The weekly group conferences were recorded using a tape recorder and conversations transcribed. The work that students generated as a result of the computer sessions and extension lessons were catalogued and stored within their learning portfolio. The artifacts and the students' transcripts along with their recordings were used in collaboration with the field notes to ensure credibility of the data. As a means to balance the data gathered, I kept a reflective journal to track emerging trends, note opinions, reflect on suggestions, and highlight my insights. I also used these tools to track and document the students' participation, perceptions, apprehensions, and suggestions that were made to overcome difficulties during the reading experience.

3.5.2 Trustworthiness and Transferability of the Data

Mills (2011) pointed out that to accomplish this, the researcher would need to collect detailed descriptive data and develop descriptions of the context. The transferability of an action research account depends on whether the researcher has given as much detail as possible to the reader so that the reader can 'see' the setting for him/herself (Mills, 2011). In an effort to provide the reader with as much rich descriptive detail as possible, I used field notes to record the events as they took place. This detailing would provide information that could be used to replicate this study. In conjunction with the field notes, the reader would also have the opportunity to read my reflective journal, which would provide valuable insights into each action that was undertaken. Additional sources that provided an abundance of rich detailed information were the students' on-screen e-book recordings, conversations (both transcribed and audio recordings), and group conferences along with the artifacts the students generated. As a means of tracking interventions, the transcripts were used as a visual record that highlighted where interventions were used along with their effects. In addition to the field notes, my reflective journal entries, and the recordings, I used the students' work as a method to monitor the effects of the ORT e-book program. Artifacts placed within their personal learning portfolio were routinely discussed with the child, catalogued and recorded in the field notes. By including examples of child generated artifacts, the reader can visualize the effects e-books have on emergent readers. Whether writing in my field notes or reflective journal, to

documenting and cataloguing artifacts, I made sure to include enough detail in order to allow a fair judgment to be made about the transferability of the data.

3.5.3 Dependability

Dependability refers to the stability of the information collected. In order to ensure the data collected remains dependable, Shenton (2004) following the direction of Guba (1981) recommended that when data is collected, the researcher should produce an audit trail. This trail makes it possible for external auditors to examine the processes of data collection, analysis, and interpretation. As well, both these researchers suggested that an overlap method be used when collecting the data, so that the weakness of one piece of information is compensated by the other. The dependability of this research was achieved through conducting an inquiry audit with two colleagues who examined the details of the research process, examined the research problem, and analyzed the data. During the bi-weekly sessions, my external auditors examined the process I underwent along with the information I had collected. We discussed their opinions and compared their observations against the emerging trends that had been identified. Through these discussion sessions, the findings were challenged, examined, explored, refined, and revisited within the action research cycle. Finally, I used observational tally charts and graphs to track the students' progress, highlight their reading behavior, and monitor the development of their cuing card strategy usage. The information from these sources was compared to the observational information collected in the field notes in order to spot discrepancies.

3.5.4 Confirm Ability of the Research

Confirm ability of research can be achieved by a researcher following the practice of triangulation and reflectivity in order to enhance the trustworthiness of the research produced (Patten, 2002). The practice of triangulation is the process of comparing a variety of data sources and methods in order to cross check the data that was collected. The practice of reflexivity is the process of revealing underlying assumptions or biases. In order to enhance the trustworthiness of this study, triangulation was used as a method of confirm ability. My field notes provided the reader with a rich descriptive and objective record of the events as they took place over the course of the study. In order to balance the objectivity of the field notes, I used a reflective journal to document my perceptions and assumptions, to note emerging themes and track trends, and to make plans for the next cycle of interventions. An additional characteristic I used to ensure confirm ability was process of reflexivity. According to Patton (2002) and Shenton (2004), reflexivity is the practice of exposing personal assumptions and biases through regular journaling. This process of journaling highlights and exposes underlying assumptions. Throughout the study, I maintained a reflective journal to chronicle personal insights, reflections, opinions, and questions that had developed as a result of the field notes. The balance of objectivity from the field notes along with the reflectiveness of the journal supported the neutrality of the data that I collected over the course of the study.

As a way to capture the sounds, feelings, and the events as accurately as possible, students activities were recorded using a variety of methods; for example, the Camtasia software was used to capture on-screen activities, tape-recorded conversations, and artifact collections. These verbal and visual sessions were immediately transcribed, so as to preserve the authenticity of the data collected, and were reviewed within the field notes and the reflective journal. By using this cyclical process of triangulation, I increased the sophistication of my indexing procedures, which helped me notice more points of comparison and contrasts.

3.6 Conclusion

Using an action research approach allowed me to continually revisit and explore questions I had about the ways students learn to read. Applying qualitative measures such as field notes, transcribed conversations, reflective journals and work samples, I designed tests to validate my research question. Initially the purpose of the research was to help my practice but if these findings were to be published they could potentially assist other teachers who are investigating a problem similar to mine. When beginning this study, my initial intention was to support emergent readers while improving my personal/professional practice through an individual action research study. I soon discovered that although I was making progress with emergent reading, I was unsure if changes were happening within my practice. Although I was using supports such as my professors and our school administration, I found it helpful to seek assistance from my colleagues and co-workers to check my data. It soon became apparent, that the problem I was facing within my classroom was not unique.

Others were facing the same dilemma. Through this act of sharing and seeking advice, our school is now participating in a provincial inquiry project designed to support teachers improve ways to approach the struggling reader. In the next chapter, the data will be examined in detail for themes and trends which emerged.

Chapter 4: Data Interpretation

4.1 Introduction

It will describe how the action research cycle was used to generate research data to improve my professional/personal practice and develop emergent reading skills within the classroom. This chapter will interpret the results from the data then place it into context from the view point of the student, and of the teacher. In addition to the data being analyzed, examples will be used to highlight the themes and trends that emerged as a result of the actions carried out. The final section will discuss how the 'action planning phase' was used to systematically guide practice and to support learning activities.

Mills (2011) described how action research conducted by teacher-researchers can provide valuable data that can be used in their teaching practice. The process of gathering information throughout this cycle, according to Mills (2011), is an attempt by the teacher-researcher to summarize the effects of each action in a reliable and accurate manner. In his discussion on the importance of ongoing data analysis within the action research cycle, Mills (2011) pointed out that the interpretations of the data is a critical feature, as it focuses on the implication of the findings. In the next section, I will discuss how the data were collected, analyzed, interpreted then reflected upon in order to affect positive change within my emergent readers lives.

4.1.1 Action Planning and Learning Activities

Mills (2011) wrote that action planning is a key component in the action research process. Adelman (1993) quoted Kurt Lewin's prophetic statement, "No action without research; no research without action" (cited in Adelman, 1993, p.8). This section will discuss how my research has been used to support a group of struggling emergent readers.

During the data collection phase, I found myself asking the same question, "What is my next step and where do I go from here?" I began the process of critically reflecting upon assumptions I held about the effectiveness of conventional texts versus e-books, and what features were supporting emergent readers with decoding strategies. Using this as a starting point, I developed an action chart to track my process. Table 1 is an example of how I used the action research cycle to guide practice.

Table 1: Action plan highlighting trends emerging within the action research study.

Action Planning						
Summary of Findings Research Questions	**Recommended Action Targeted to Findings**	**Action Responsibility**	**Consultation**	**Data Collection Responsibility**	**Timeline**	**Resources**
1.0 How will the emergent reader be supported in a CAL learning environment that uses e-books?	1.0 Observations of student actions during DEAR.	1.0 Teacher	1.0-1.3 Administrator	1.0 Teacher	05/14/09	1.0 Tally Graph Field notes Journal DEAR books
	1.1 Student control over reading environment	1.1Student		1.1 Student	05/25/09 -06/01/09	1.1 Tally Graph
	1.2 Weekly (15 min) group conferencing.	1.2 - 1.3 Teacher and student		1.2-1.3 Teacher and Student	05/29/09	1.2-1.3 Artifacts, Camtasia recording, Field notes Journal
	1.3 Group conferencing and artifact sharing.				06/08/09	
2.0 What is the effect on phonological awareness when using the decoding strategy in a CAL environment?	2.1 Using icon features to support whole sentence reading and single word support.	2.1-2.5 Teacher and student	2.0-2.5 Administrator	2.1-2.5 Teacher and Student	06/08/09	2.0-2.5 Computer Camtasia Headphones ORT CD 2Simple CD Art Centre with supplies Artifacts Artifacts box Field notes
	2.2 Using single word narration support to encourage making a guess based on story cues.				06/12/09	
					06/12/09	

	2.3 Using initial letter sound along with sounding out strategy.					Journal
	2.4 Introduce the use of visual strategy card to support step-by-step instruction.				05/25/09-06/26/09	
	2.5 Using the Art Centre to explore their understanding of decoding and what it means to them.					
3.0 What is my role in supporting emergent learning through the use of e-books?	3.0 Document roles which were assumed.	3.0 Teacher	3.0-3.2 Administrator / Academic Supervisor	3.0-3.2 Teacher	5/18/09-6/01/09	Field notes Reflective Journal Concept map
	3.1 Develop an action cycle to reflect the changing roles.	3.1 Teacher			6/08/09-06/08/09	Concept map
	3.2 Revisit and revise roles. Were there additional roles that were assumed?	3.2 Teacher /Colleagues/ /Coworkers/			6/26/09	Concept map Reflective journal

4.0 What is the effect on classroom practice when emergent literacy is supported through the use of e-books?	4.0 Monitor the effects of convention text on students during DEAR. 4.1 Examine how print awareness can be extended. 4.2 Sharing results with colleagues and coworkers. 4.3 Division meeting define problem re: supporting phonological awareness through e-books grades 1-3 4.4 Meeting with administration to discuss funds allocation to develop e-book resources. 4.5 Draft proposal for the board.	4.0-4.6 Teacher	4.0-4.3 Teacher Administrator Academic Supervisor Progress note to board. 4.4 Colleagues/ Teacher Administration 4.5 Colleagues/ Teacher	4.0-4.3 Teacher Student 4.4-4.5 Teacher Student Colleagues	5/08/09 05/25/09 06/01/09 06/01/09 06/01/09 06/08/09 06/01/09-06/26/09 06/23/09	Field notes Reflective journal Behavior chart Dolch chart Strategy card chart Portfolio DRA Dolch Rosner Yopp Singer Personal notes Research data

To begin the analysis I assembled the findings in front of me and created a 'concept map'. By using this organizational strategy I was able to identify key issues and concerns noting emerging themes. Next, I posed questions within the themes to draw out trends. According to Stringer (2007), a concept map is a useful strategy that helps the teacher-researcher visualize trends as they develop. This process allowed me to highlight themes and trends that emerged from the data.

After examining the results, I reviewed and coded the identified areas examining them in greater detail. A computer software program Camtasia was used to record students on-screen actions along with a voice recording. These video/audio files along with written transcripts, group conferencing, artifacts from portfolios, reflective journals and field notes were used to construct a profile. Once themes were highlighted, I examined each area in greater detail, tracing antecedents, consequences, and noting trends. The concept map illustrated in Figure 5 is an example of the process I followed when initiating the data examination phase of the study. I started by introducing the central problem then highlighted the research questions I wanted to investigate. In figure 5, each circle represents one of the study's research questions.
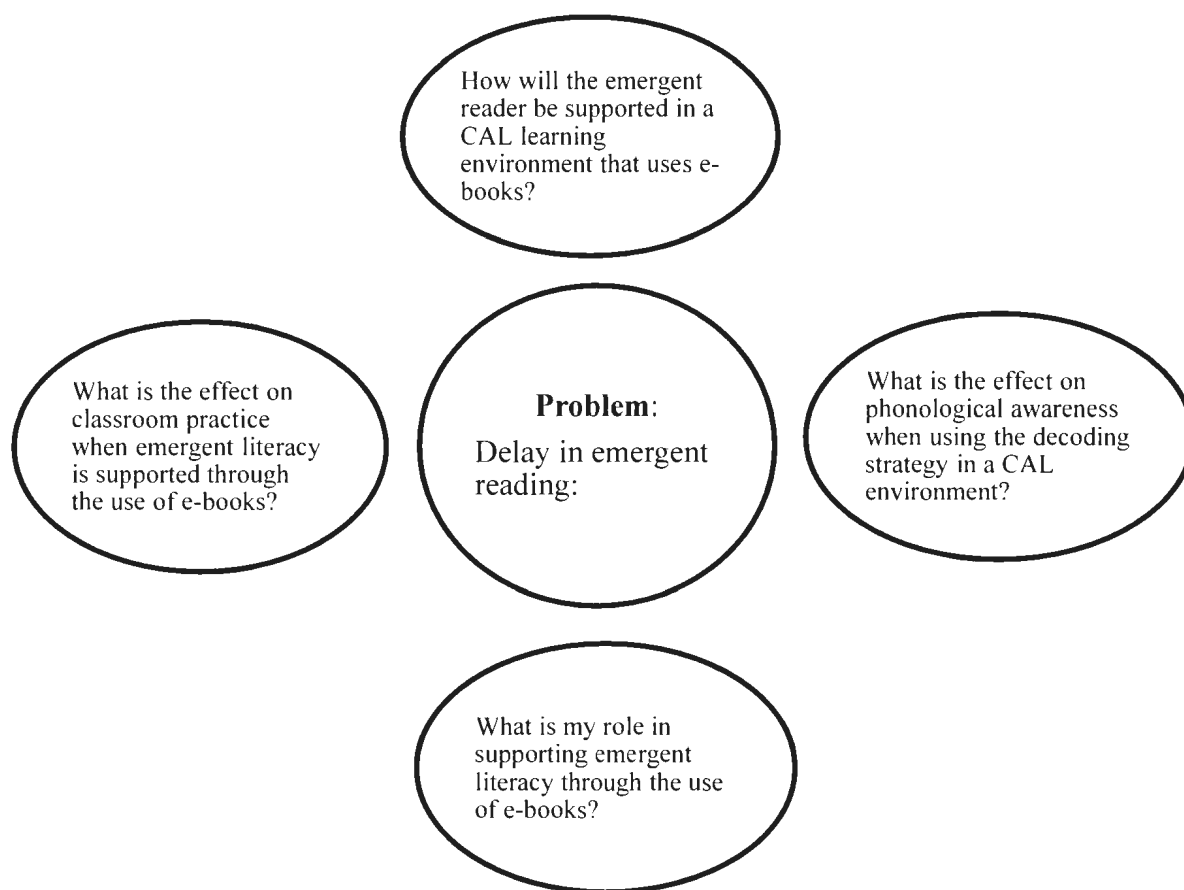
Figure 5: Concept map used to highlight the central research focus and the research questions being investigated.

In the initial investigation my objective was to gather observational information from the students when they were reading conventional texts. This information would serve two purposes: it provides data on areas of improvement within our current reading program, and the types of resources that can be used to motivate and inspire children when reading.

At the beginning of the study, the first task was to evaluate what was actually happening during our DEAR sessions. In the following observational and reflective journal entries I detail how the evolution of e-books emerged into our classroom's reading program.

Reflective Journal:

Wednesday May 13, 2009 - I think it is important to initially examine what role I play in the reading process. I feel I need to serve as a reading role model for the students. This will demonstrate to them, how I feel about reading and the enjoyment it can bring. I also feel it is important to informally model strategies we are using along with resources (such as our word wall, sounding out strategy card, the strategies themselves). By doing this children will be given a positive first hand reading experience, something which is limited at home. This reading opportunity will also give me time to observe exactly what is happening. Tomorrow, I will have the educational assistant record my actions focusing on my role within the reading process.

Field Note:

Thursday May 14, 2009 - Process: Using a watch Mrs. Feero asked me to document her movements during the DEAR time. A.Walsh
Recording begins:
09:20-09:24 Teacher calls everyone into the center of the classroom. Book bins are out on the carpet. It took about 5 minutes for the group of students to finish up what they were doing and make their way to the carpet area.
09:25 Everyone settled Student 1 gets up takes book from the Exploration Area. He isn't reading! Mrs. Feero is interrupted. She makes eye contact. Student 1 continues to make a bird flapping motion with the book.
09:27 He continues to fly the book now making noises.
09:28 Mrs. Feero got up off the carpet went over and whispered in his ear. He immediately sits down on the chair and began looking at the pictures.
09:33 Mrs. Feero walks around showing presence. She returns to reading with three students.
09:35 Student 2 and 3 get up at the same time. Mrs. Feero tells them to sit down and look at the pictures and see how many letters sounds they can find. She goes over to make sure that they are reading.
09:41 Mrs. Feero returns to three children she is sitting with. She apologizes and continues to read the book. She is getting frustrated. Her eyes are continually darting around looking at the four students.
09:42 Student 3 begins making letter sounds, giggles and laughs as each sound gets louder and sillier. He draws in two friends sitting next to him.
09:42 She stops, glances over and points directly to Student 3. He stops and returns to looking at his book. The two friends are now distracted and off task. She gets up and moves them away from Student 3's influence.
09:43 Mrs. Feero calls out for Student 2. She begins looking around for him. She goes into the coat room, checks the bathroom, then returns into the main class and looks in hiding spots. She locates him under the student work table. No book. He has apparently been there for 12-15 minutes not reading.

09:46 Mrs. Feero asks for the books to be put away. Children are transitioned into the next activity. Session ends 0950. Mrs. Feero says to meet after school to talk about the observations.

Reflective Journal:

Thursday May 14 2009 3:25-3:45pm: At the end of the school day we both sat down to discuss what happened during the DEAR session. A. Walsh relayed how distracted I was, and that I really didn't appear to be paying attention to the children I was reading with. She reflected how I was not relaxed and did not appear comfortable. She stated I appeared stressed or rather distressed (as I kept apologizing to the students I was reading with). She commented on how, all my attention was devoted to the "problem" students and how they dominated the reading experience as a result of their behavior. A. Walsh commented on how the rest of the children, recalling they were doing a good job (focused, on task, using strategies, sharing understanding). They were sharing, chatting, exploring strategies and using resources about the room. These students were grouped together in a reading unit, while the struggling children were sitting on the peripheral of the carpet (not engaged and resistive). When we reflected on their actual actions, this is what we discovered. We examined their sound understanding, letter recognition, and where they were in the decoding process. Each child was at the same point in their phonological awareness. We also examined the array of reading materials available and reflected on the factors within books that would captivate and hold their attention. Although we use conventional paper texts, listening CD-ROM story books, DVD e-reading books, and e-books available on CD-ROM in our activities, my focus was directed at using paper texts during the DEAR session. When the study gets underway on Monday, I will monitor the types of behaviors the children are exhibiting and the frequency they are occurring at. My next step would be to examine these children while they are participating in intentional play activities, monitoring which reading preference mode they prefer.

Week 0 (May 18-22, 2009) when following up questions that were posed earlier, behavior themes and reading preferences were looked into. Characteristics such as restlessness, distractibility, disruptive behavior, dependency and restiveness were affecting concentration and overall reading engagement of these children (see Appendix E). These next excerpts detail a list of common characteristics that were examined and reflected upon.

Field Note:

May 18, 2009 9:30AM - This morning I observed the four students on the carpet during our DEAR time. The purpose of this session is to observe students and record their behaviors when reading. Students were observed to be: *unmotivated, uncooperative, and resistive to reading books while on the carpet, unsettled, fidgeting, easily distracted, distracting others.*

May 19, 2009 9:35am - Continued observation detailing reading behaviors of four students. Repeated behaviors: *unmotivated, uncooperative, and resistive to reading, unsettled, fidgeting, easily distracted, distracting others.* Strategy: place the group of children at a table with the teaching assistant who will read a book to them. Observation: Students looking around the room. Talking to others while the teaching assistant is reading to them. Playing with table objects. *Dependent and disrespectful.*

May 20, 2009 9:45am, 1:40pm - Final observation of behavior baseline. Today students were observed during their DEAR time and also while at the Library Centre. The trend continues with the behaviors documented over the course of this week. Students when at the Library Centre have access to a variety of book formats. When observed they chose to*: talk to friends, distract others, and wander around.* Students 1 and 3 required direct supervision and redirection by the teaching assistant to keep them on task.

The information gathered from the first week's observations helped place the research problem into context for me. In the following section a detailed analysis will be presented addressing each of the research questions highlighting example of the trends that emerged.

4.1.1.1 Question One

From the first theme the data suggested students who were supported by e-books demonstrated an increase in sustained reading. As students' sustained reading increase, three trends emerged (see Figure 6): (a) students reflected a positive attitude; (b) their focus improved; (c) transfer of knowledge into other areas of their learning.

Q.1 How will the emergent reader be supported in a CAL learning environment that uses e-books?	
Theme: improvement in emergent students' ability to sustain their reading focus	First Trend: improvement in independent and sustained reading focus (book and e-book)
	Second Trend: improvement in the emergent readers' behavior and attitude
	Third Trend: improvement in the transfer of knowledge into other areas of their work (writing, art, and oral language) *to be discussed later Q.2*

Figure 6: Examining the first research question through a concept map. The central theme was discussed and trends which emerged as a result of an action taken were reflected upon.

4.1.1.1.1 Question 1 Trend 1

Data from the first theme (improvement in sustained reading) was reflected through a chart that recorded students' sustained reading times during the 15-minute daily DEAR period. The baseline provided in Week 0 (week May 18–22) established how long each child was able to read using conventional paper-based texts. During Week 1 (May 25-29, 2009), students were introduced to the ORT e-books on CD-ROM . A baseline was established for e-book reading. Week 0's baseline average from the research cohort, sustained reading time was 2.3 minutes out

of a 15-minute reading session. At the end of the study an overall increase of 11.18 minute improvement in sustained reading was demonstrated (see Table 2). Student 1's baseline was 2.8 minutes during week 0 and, at the conclusion of the study, his average reading time rose to 13.8 minutes. Student 2's baseline reading time during week 0 was 2.8 minutes and, by the conclusion of the study, had increased to 11.5 minutes of sustained reading. Student 3's results reflected the same improvement with his baseline beginning at 2 minutes and concluding at 10 minutes. Student 4 continued to reflect the trend of sustained reading improvement with his baseline starting at 1.6 minutes and finishing at 9.4 minutes of sustained reading time.

Table 2

Sustained Weekly Reading Times for Each of the Participating Students, With an Average Total.

Sustained Weekly Reading Times (based on 15-minute sessions)

	Week 0	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Average
Student 1	2.8	7	11.6	12.6	15	16.8	20	13.8
Student 2	2.8	6.2	8.8	9.8	13.4	16	15	11.5
Student 3	2	5.4	7	10	10	12.6	15	10
Student 4	1.6	5.8	6.8	9	10	10	15	9.4

The data presented in Figure 8 clearly indicates students' lower reading time during Week 0 when they were using conventional reading books as compared to their higher reading times during Weeks 1-6 while using the ORT e-books CD-ROM's. Once children were introduced to the e-books, they began to read for longer periods of time. In Figure 7, the data displays each student's individual reading average over the course of six weeks when using e-books during their reading time.

Average Sustained Reading Time
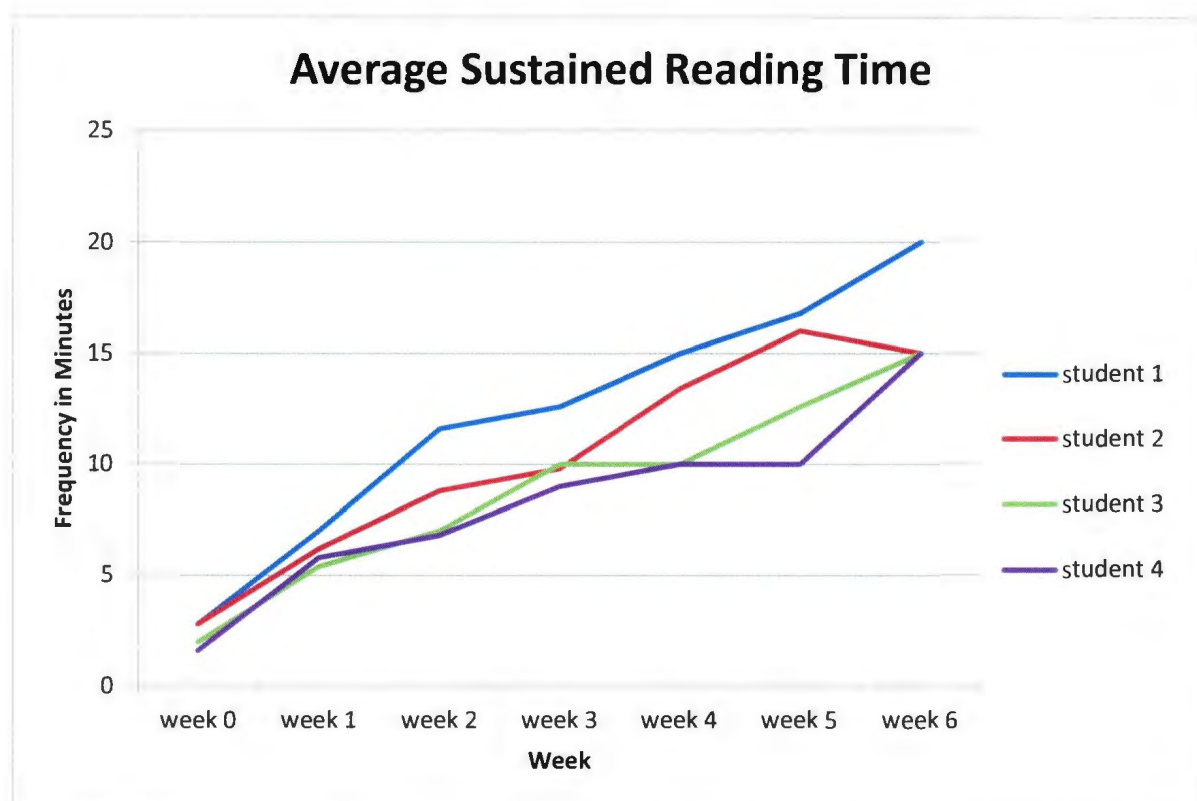
Figure 7: The average sustained reading time showing a positive correlation between reading and the use of e-books.

4.1.1.1.2 Question 1 Trend 2

The second trend to emerge from supporting emergent readers with e-books was the improvement in the students' reading attitude and behaviour. During Week 0, when students were being monitored for sustained reading activity, I documented in my field notes behaviors that were preventing them from participating.

Table 3

Examines the Types of Behaviors Observed During the Fifteen Minute DEAR Session and Also the Frequency With Which They Occurred.

Week 0 May 17-21 2009

Observed Behavior	Frequency (15 minute DEAR reading session)	Frequency Teacher Intervention Required
Restlessness	35 times	
Distractible	30 times	
Distracting (to others)	30 times	
Resistive	33 times	
Dependent	38 times	
Unmotivated	36 times	
Total		172 times
Average amount interrupted during each session		28.7

This observational session, revealed student's increased dependence on the teacher for guidance, motivation and strategy support. This was a critical finding. Every time I was taken away from reading with an individual child or groups of children (to address the behavior needs of one or more of the research participants) the target children were missing concepts I needed to review or introduce. Although a time analysis would have been helpful, this group of students interrupted the teacher 9.5 times every 15 minute DEAR session. Over a 5 day period this totaled to 38 times of lost directed teaching. If examining this issue as a whole (addressing every behavior that required teacher intervention) my attention was redirected a total of 172 times

during a 1 week period, this amounts to 28.7 times each 15 minute DEAR session (see Table 3). This is an astounding result as the majority of directed teaching time is monopolized by four students leaving the rest of the class unsupported. From the information gathered when observing the behavior, I examined whether or not these children would benefit from a change in the traditional paper based reading format. In the last week of the study (Week 6, June 22-30) students behaviors were monitored again (see Table 4). The data from this cohort revealed increase in reading engaged, motivation and willingness to read. The difference in reading format supported students' independent reading reducing frustration, distractibility, restiveness and dependence.

Table 4

This Chart Demonstrates a Decrease in Behaviors Exhibited at End of Study.

Behavior	Frequency (15 minute reading session) Week 6, June 22-26, 2009
Restless	1 time
Distractible	0 times
Distracting	2 times
Resistive	0 times
Dependent	0 times
Unmotivated	0 times

In Week 0 (May 18-22, 2009), I trialed a variety of reading sources and discovered all the participants naturally gravitated towards the computer and demonstrated an interest when reading e-books. Using this information as the baseline, I continued observations over the next six weeks, documenting changes in students' attitudes during reading sessions. The students'

activities were documented in field notes and reflected upon in my journal. An initial observation was made in Week 0 (May 18-22, 2009) and again during Week 6 (June 22-30, 2009). The data from the graph for Week 0 (May 18-22, 2009) reflects an increased frequency of reading when the children switched from conventional paper text to e-books. Figure 8 represents four reading methods given to students and indicates a preference for e-books on CD-ROM .
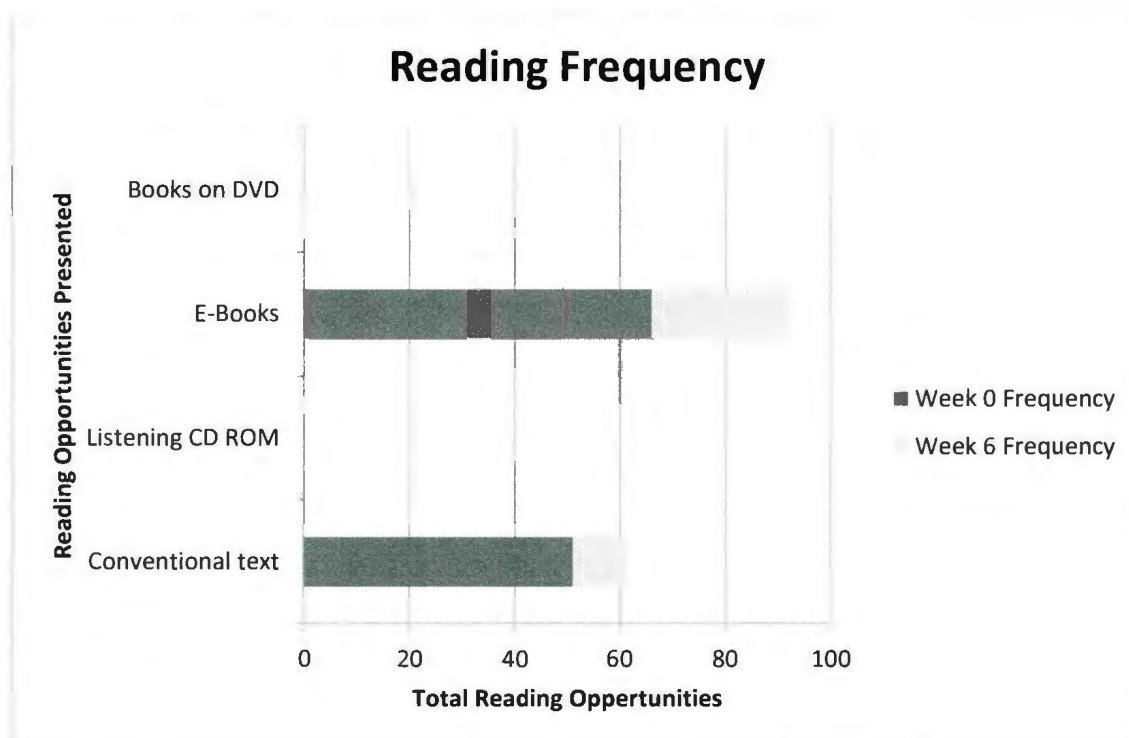
Figure 8: Represents four reading methods children choose from.

Of note, the results from Week 6 indicated a balancing effect happening between e-books and conventional texts. This information is important when reading merges with writing through a cross curricular approach.

Once the reading preference (or style) was identified and students were supported using e-books, I immediately noticed a change in their focus, a gradual increase in their attention and ability to stay on task, willingness to share and have others participate in their reading experience. The data in Week 0 (May 18-22, 2009) revealed student's consistently demonstrating

the same negative behaviors when reading conventional reading text, whereas in Weeks 1 through 6 the data indicated a steady increase in sustained reading times when using e-books. Examining this phenomenon closer, not only were students reading for longer periods of time, but there was a change in their reading behavior and attitudes. The following example is an excerpt from my Week 4 field notes. The observations discuss direct changes in students. While my field notes provided the direct objective evidence, the use of my reflective journal assisted me in questioning the actions taken and devising a next step. Here is an example of an excerpt from my field notes and how I used the information to question and develop strategies to further the students' understanding.

Field Notes:

June 10, 2009 9:35am - Student 2- Went right to the computer, logged on. Did not waste any time. Settled and began reading immediately. Observed - Clicked through book looking at pictures, clicking on hotspots to animate characters. Replays book again. Listening to narrator and attempts to repeat the sentence. Interrupted by friend. Student 2 tells his friend about the book. Unplugs the headset and listens to the book with his friend. Reviews and discusses the book. The students were sharing and taking turns.

Reflective Journal:

June 10, 2009 11:15am - Student 2 is settling into reading. Is quiet and focused when using the computer (quite a difference from his carpet behavior)! I was pleased about Student 2 sharing his reading book with a friend. They were engaged and focused. Question: How can I capitalize on this shared (reading) experience? Strategy: Try adding sharing their book with a friend after they have read it…(reading to a friend) and record the experience using the Camtasia. When speaking to Student 2 during our conference when he goes to retell a story note what he uses to help him (book or e-book). Strategy: Use a paper-based copy instead of the computer to encourage retelling. Strategy: Have the ORT reading books running during learning activities, monitor students use of library time.

The following week, these entries were recorded:

Field Note:

June 19, 2009 9:40am - Student 1 went straight to the computer. The computer was off, he turned it on, logged on, opened program, chose book, and began reading. Is trying to sound out words (i.e.) l/oo/k clicked on the word. Beams! Searches for someone to share the experience with. Marshals me over and demonstrates sounding out the word. Discusses sounding out success with me. Relays: "Look Mrs. Feero, I am reading. I found the word *look*." Turns the next page and points to words he is able to read independently and begins reading unsupported.

Reflective Journal:

June 19, 2009 11:20am - Students today have shown greater independence and are taking control over their learning environment by beginning the (process) without support. Question: Would they benefit from acting as mentors showing others how to operate the e-books? Question: Will this help reinforce using cuing strategies by showing their friends?

These two sets of examples highlight how these students' attitudes along with their behavior gradually evolved as a result of using a CAL environment to support their reading development. With this change in reading attitude, it was noted that the students were beginning to apply strategies which supported their phonological awareness and decoding ability. I felt at this point, with the students motivated, my next step could address reading support strategies would develop their phonological awareness.

This next section will reflect how e-books were used to develop decoding strategies which led to an improvement in student's phonological awareness.

4.1.1.2 Question Two

Data results from research question two indicate two dependent themes (see Figure 9). The first theme highlights an improvement in the students' confidence and motivation when reading independently; and the second theme highlights an improvement in accessing and using resources to support their learning and understanding. As a result of the improvement in both

these areas, I noticed a change in their high-frequency word recall, picture cuing to retell and sequence a story, along with strategies supporting decoding.

Q2. *What is the effect on phonological awareness when using the decoding strategy in a CAL environment?*

↓

Theme: students reading accuracy improved, able to use resources, are confident and motivated

↓

First trend: increase in accuracy sounding out words
Second trend: demonstrated a transfer of knowledge and understanding
Third trend: increase in high frequency word recognition
Fourth trend: increase in retelling and story sequencing

Figure 9: Concept map outlines 4 trends relating to how e-books were used to develop phonological awareness and decoding of words.

4.1.1.2.1 Question 2 Trend 1

Using both an observational scale and field notes were extremely helpful when recording examples of decoding strategies. During the initial observational session (Week 0 May 18-22), I recorded each decoding strategy children were using when reading conventional books during the 15 minute daily DEAR time. Over the six week study observations continued monitoring the frequency with which students were applying strategies when reading. Interestingly, results from the baseline Week 0 assessment (May 18-22, 2009) revealed the participants did not use cuing strategies prior to the e-book reading experience (see Table 5).

Table 5

Observational Record Documented in the Field Notes Monitoring Students Applying Cuing Strategies While Reading Conventional Texts During Week 0.

Baseline	Week 0 (5 days): Observed frequency of applying cuing strategies	
Student 1	• Cuing strategy card	0
	• E-book sounding out support	0
	• Independent reading	0
Student 2	• Cuing strategy card	0
	• E-book sounding out support	0
	• Independent reading	0
Student 3	• Cuing strategy card	0
	• E-book sounding out support	0
	• Independent reading	0
Student 4	• Cuing strategy card	0
	• E-book sounding out support	0
	• Independent reading	0
Total		0

Data from Figure 10 and Figure 11 (Weeks 1-4) demonstrated a gradual increase in e-book help feature support usage along with a paper based cuing strategy card. These results plateaued in Week 4 as Students 1 and 2 appeared to use the strategy card and e-book help features with less frequency. Over the next two weeks these students were observed to be reading a variety of texts, engaging in reading and writing activities with minimal teacher intervention.
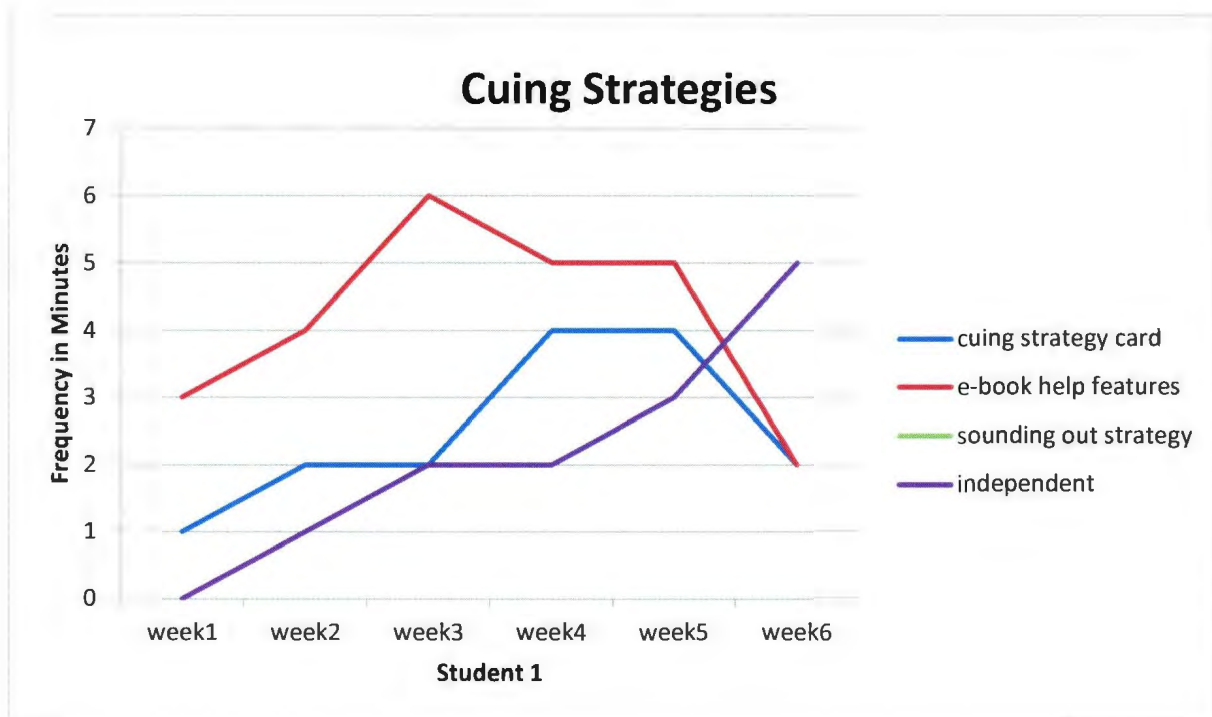
Figure 10: Results for Student 1 when using cuing strategies while reading e-books.
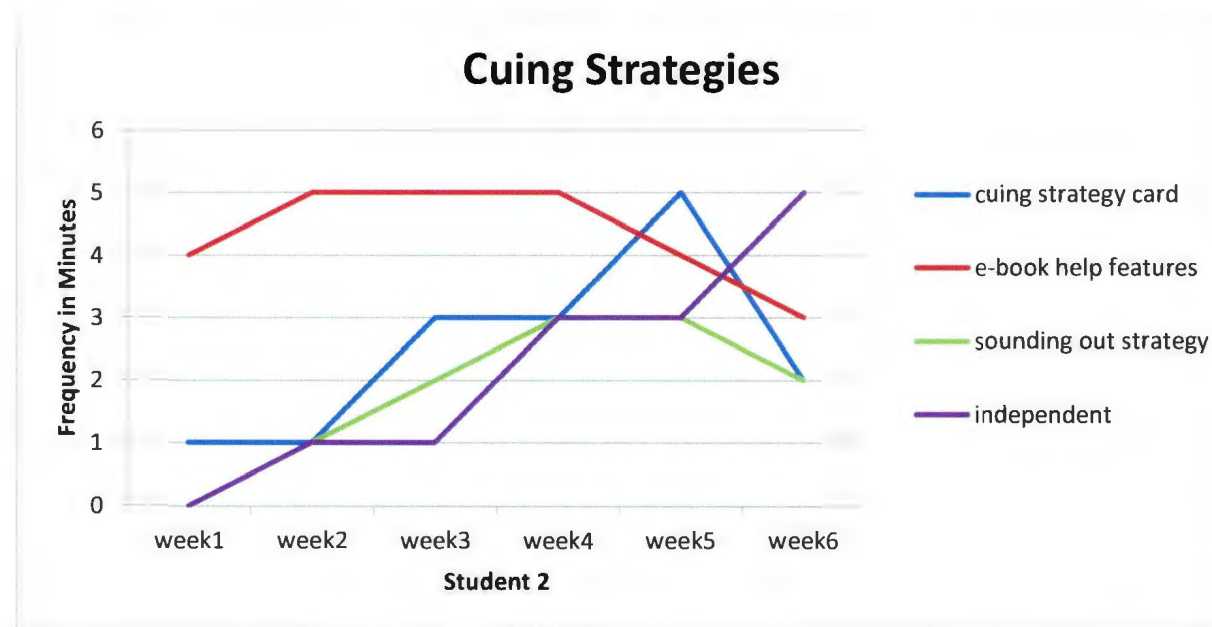
Figure 11: Results for Student 2 when using cuing strategies while reading e-books.

While this trend was observed in Student 1 and Student 2, it was not observed in Student 3 or Student 4. Figure 12 and Figure 13 reveal no evidence of independent reading within Student 3 and 4, however there was an increase in frequency when using cuing strategies. The example below demonstrates Student 3's steady use of supportive features such as the cuing strategy card and e-book supportive features. Student 4's results reflect the same trend, although there is a decrease in the sounding out strategy beginning in Week 5 and into Week 6, while there is an increase in the use of the cuing strategy card (see Figures 12 and 13).
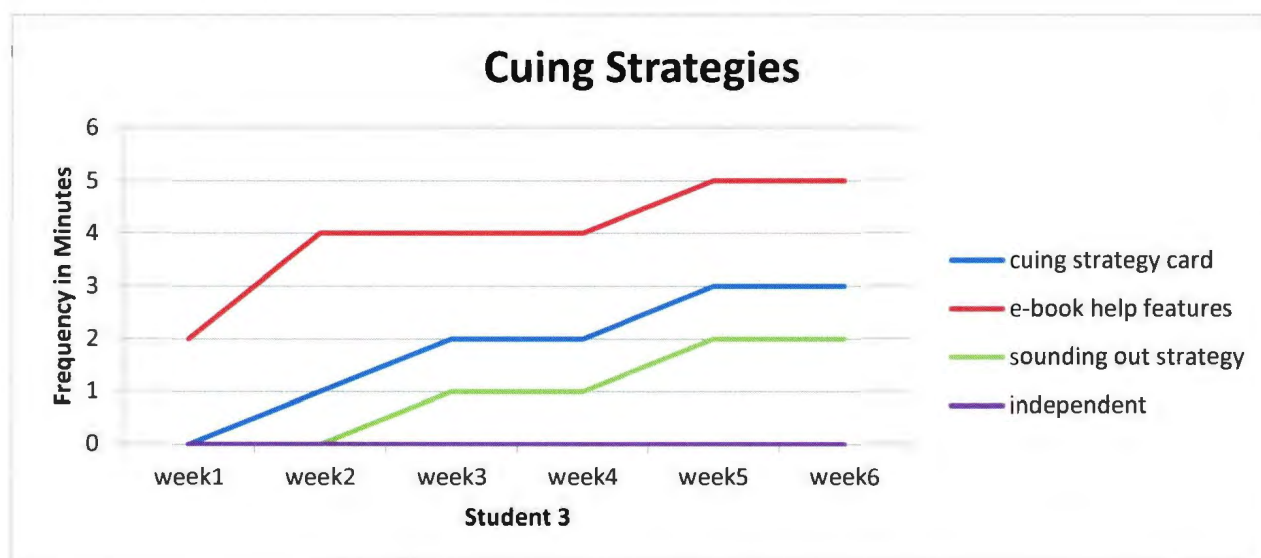
Figure 12: Results for Student 3 showing a steady use of various cuing strategies over the course of six weeks.
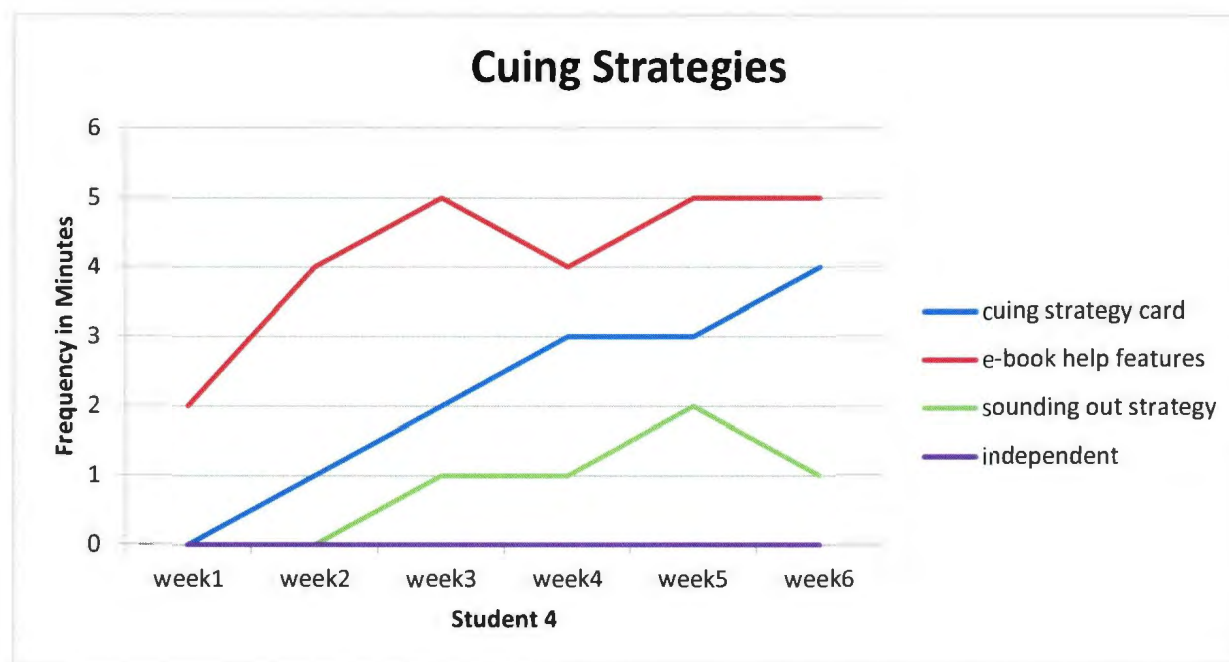
Figure 13: Results for Student 4 showing a steady use of various cuing strategies over the course of six weeks.

These findings indicated that students who progressively applied cuing strategies when reading saw an increase in reading independence along with an increase in focus.

In this set of examples observations were recorded through portfolio samples, field note excerpts and reflective journal entries. These examples illustrate how students were applying their understanding with regards to cuing strategies and phonological development.

After each e-book experience, students were encouraged to use a variety of classroom learning activities to illustrate their understanding. In our first example, Student 3 was observed working at the Art Center. Student 3 in particular enjoyed responding to his reading experiences through the medium of art. Each art piece was stored in personal portfolios and shared during weekly individual and group conferences. Student 3 demonstrated such improvement that I

consider this experience an important example of how e-books support phonological development. During Week 3 and Week 4, I spent time with Student 3 at the Art Activity discussing his illustration (see Figure 14). I was particularly interested as he made a significant attempt to record his thoughts. My field notes recorded this conversation with him.

Field Note:

May 28 2009 1010am - Sat with Student 3 at the Art Centre and talked about his experience using the e-book.

Teacher: "I see you are really busy. What are you making?"

Student 3: "Biff, I drewd her. Look I writed her name. (Points to the word) /B/i/f/. "I sounded it out. I drewd me, too. This is me." (Points to the picture and points to the word me.)

Teacher: "That is an awesome picture of Biff. I love her blond hair. I see you wrote a sentence!"

Student 3: "Mrs. G. helped me get the words." (Points to the sentence and finger continues following along.) "/I/ /l/ /ike/ /b/ (teacher support) blond hair."

Teacher: "I hope you will show your picture and read your sentence at our meeting."

Student 3: (Smiles) "Okay."

In Figure 14, Student 3 has written about liking Biff's blond hair. His effort reflected prior knowledge of high frequency words and the initial and final letter sounds to form the word /blond/.
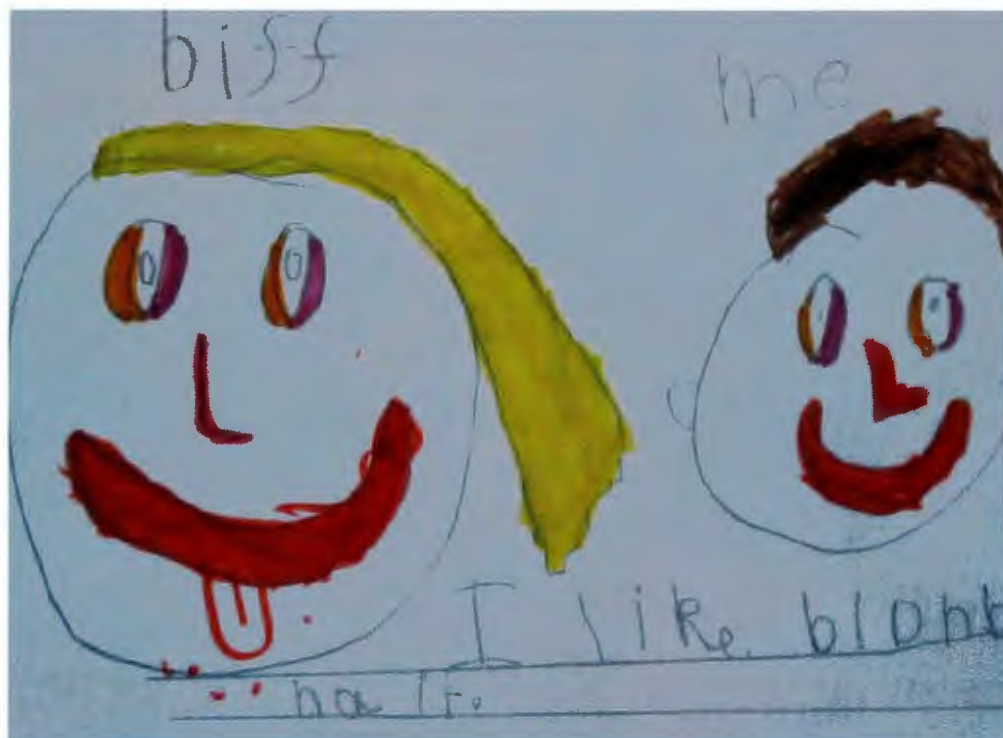
Figure 14: Student 3's portfolio work sample, May 28, 2009.

Later that day, I wrote in my reflective journal, recording how Student 3 was able to

transfer his understanding of letter sounds to the printed text by using an illustration to express

his thought.

Reflective Journal:

May 28, 2009 11:30am - Student 3 demonstrated he was beginning to transfer his
sounding out into his writing. During our conference he mentioned he likes to draw
using the program RM Color Magic. Strategy: I will see if I can get another
computer to be placed at the Art Centre to see if students would like to use the
2Simple program which will encourage story illustrations and writing.

Two weeks later, during Week 4, I had another discussion with Student 3 (see Figure 15).

Field Note:

June 10 2009 9:30am - Student 3 at the computer. Using 2Simple software and its
features to create a book. Each page has an illustration and text. While he is creating the
book, he is speaking to his partner. The discussion is about text. They are sounding out
words and asking friends around them how to spell words. This activity lasted 12

minutes. The text contains evidence of initial letter and consonant placement. HFW from the word wall. Both children were using e-books from the CDROM series. Following this activity, Student 3 went directly to the puppet theatre. Got the finger puppet theatre, set it up and went looking for his partner. His partner came over to the puppet activity and he began discussing his story, reading his book to the friend. Student 3 pointed to each word and read it back to his partner. The partner began reading with Student 3. Cooperatively, they picked out the characters from the book and began playing. In the beginning they were referencing Student 3's book, but the conversation emerged into an adlib story of their own.

Reflective Journal:

June 10 2009 11:40am- I would have never thought that Student 3 could have created a book, while working with another student! I was so proud when both students demonstrated evidence of applying strategies such as using the word wall to support their sentence writing. Another important step for Student 3 was he was demonstrating progression with his phonological awareness by applying a number of strategies at once. He began sounding out using the initial letter for /came/ beginning with a hard /c/ sound. We had just finished reviewing the silent /e/ and he questioned his friend saying "does this need that silent e?" while continuing to sound out /c/ /am/. Next step for Student 3 is, during the conference on Friday, to discuss how the e-books are supporting his phonological understanding, and how he is using the curing strategies (cuing card verses strategies offered through the program). When monitoring him tomorrow (in the follow up) observe his attitude towards reading and writing are they the same now?
I was amazed at the focus and attention Student 3 was placing into his play activity with the puppets. The conversations were focused and there was evidence of sharing and cooperative play. This was a concern of mine with Student 3's social development. He always appeared disenfranchised with the reading experience causing problems for other students. Now he is a totally different learner. He is engaged and happy. He is always eager to explore and learn and continually demonstrates his understanding by trying to work through problems independently asking for help when needed. Could this change in learning attitude be attributed to the supportive features of the e-books? Does this type of resource impact on perception of "being a reader?"

Field Note:

June 11, 2009 10:15am - Observing Student 3. Has just completed his e-book reading session. He went directly to the Art Centre and began working without prompting. Student working for five minutes unsupported.

Teacher: "Hi there, can I sit and watch?"

Student 3: "Ya."

Teacher: "I see you like using the computer to write." (Student is using the 2Simple writing program to make a story.)

Student 3: "I like the puter."

Teacher: "I love reading stories."

Student 3: "Want to hear me?" (Student sounds out the word) "/Ch/ip/ … I know that word. Chip." (Begins sounding out plays) "/p/l/a/ …" (repeats) "/pl/a/s/…" (He next attempts the word with) "/w/i/t/" (and points to floppy the dog whom he recognizes.) (He then points to Chip's shirt.) "I like his shirt." (Continues reading.) "/h/ /rn/ /fs/ … he runs fast."

Teacher: "That is a fantastic story you wrote all by yourself. I like how you sounded out all the words in your story. Well done! Will you share your story with your friends? I know they would love to hear it!"

Student 3: "Can I read it to the class?"
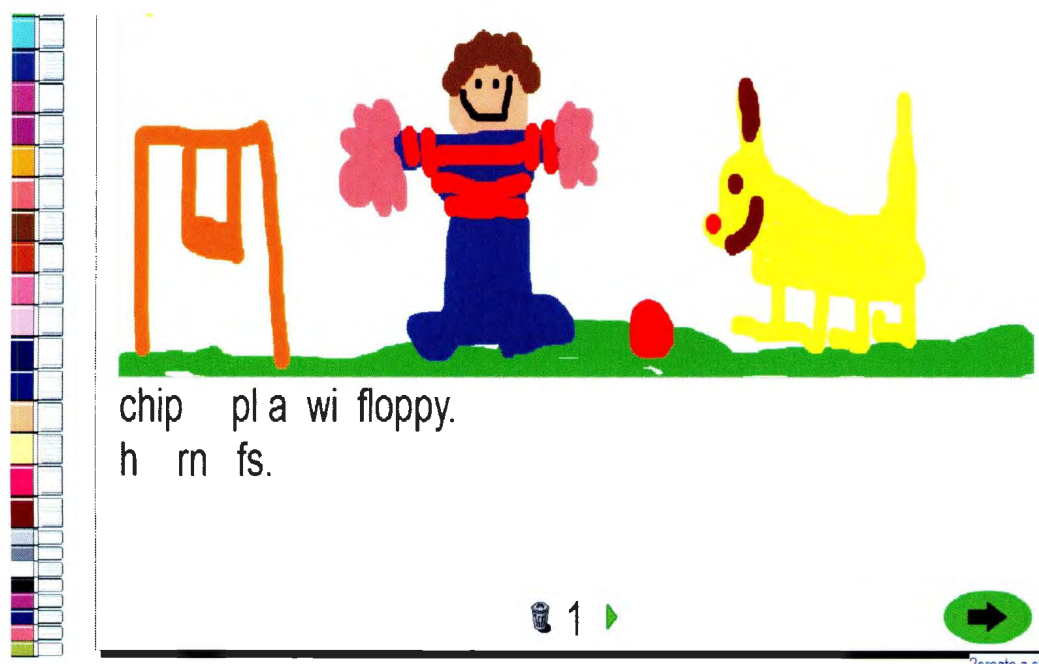
Teacher: "You sure can."

Figure 15: Student 3 Portfolio Work Sample, June 11, 2009

When writing about this experience, I noted how excited he was sounding out the letters he had written creating a word then a sentence.

Reflective Journal:

June 11, 2009 11:30am - Student 3 appeared to enjoy using the 2Simple writing software to compose his story. It was good to see that he is using his strategies he is applying with the ORT program and that they are being carried over into his writing. His focus during writing activities is gradually increasing. Question: Will having the 2Simple writing program accessible to students when using the computer encourages their sounding out in their writing? Strategy: Dedicate one computer at the Computer Centre with 2Simple writing program running. Encourage children to switch half way through the Computer Centre activity to encourage their writing.

These examples illustrate how one student was able to benefit from cuing strategies introduced through an e-book. The data is clear that Student 3 was not only applying initial sounding out and chunking strategies, but also was transferring these strategies to help him write. Although I did not observe an increase in his independent reading, it could be said that he increased his independent reading practice through his writing and drawings. His engagement played a key role in learning how to "sound out" words he was writing. This led him to actively read and enjoy a host of other activities (including writing).

4.1.1.2.2 Question 2 Trend 2

Another trend highlighted from the analysis of question 1 trend 3 and question 2's research data was the student's ability to transfer knowledge and understanding to other areas of their work. In my field notes and reflective journal entries along with work samples and screen shots, I commented on observing an improvement in students' independent writing. These next examples highlight individual pieces of evidence that reflect not only improvement in reading strategy use, but also how this new understanding was translating into other areas of their learning.

This example examines Student 2 and the connection made between reading and writing by accessing supportive e-book features. Figure 16 illustration was produced in Week 2 (June 3, 2009) and details a computer screen with a mouse on the right hand side. In the lower left hand corner of the illustration there is a symbol of an ear drawn. This symbol when activated (or clicked on) narrates the sentence back to the student. The next symbol in the right hand corner of his illustration is a pair of eye glasses. The eye glasses animate the page for the reader. This feature creates a moving story. This illustration outlines how Student 2 views the computer as a supportive tool he can use to improve his reading and writing understanding.
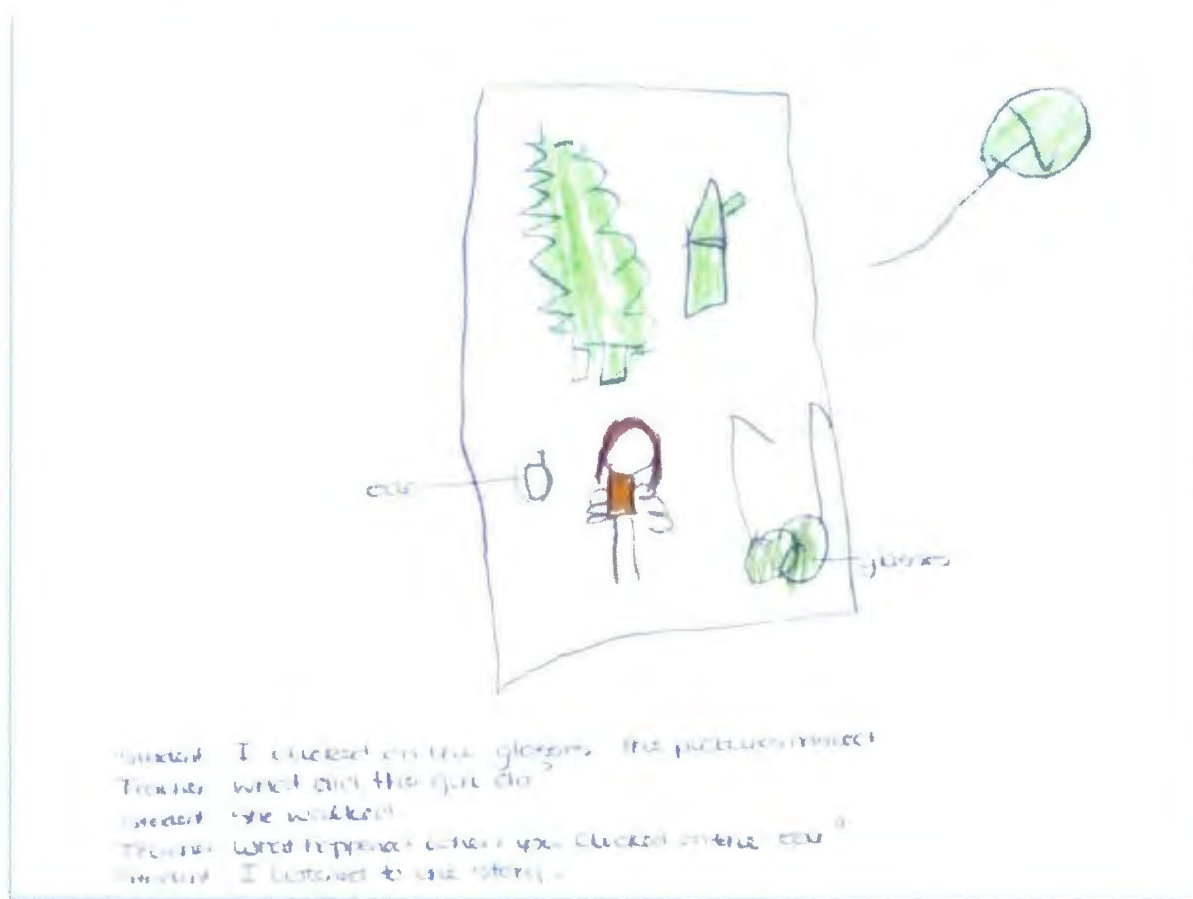
Figure 16: Illustrates how Student 2 is carrying forward his understanding through his reading and writing.

This next example contains excerpts from the field notes and reflective journal highlighting Student 2's ability to transfer knowledge and understanding (from the e-books) into other areas of their work.

Field Note:

June 3, 2009 9:45am - Student 2 has just finished reading on the computer. He shuts down the screen goes immediately to the writing table. He sets up the table for work, placing a piece of paper in front of himself and crayons. Student 2 begins the illustration. The observation continues until he is completed. I move in.

Teacher: Can you tell me what you have been up to?

Student 2: I made a picture of my book. See. (Points to his illustration)

Teacher: This is a great illustration. Can we talk about it? (I sit down next to him)

Student 2: Yep. (Nodding head)

Teacher: What e-book did you read?

Student 2: I read *New Trainers*. It was a funny.

Teacher: What was the book about?

Student 2: Biff got new trainers and he got in trouble.

Teacher: That sounds exciting. Have you ever had new shoes?

Student 2: Ya, I got new soccer ones. Mine got dirty, but they supposed to.

Teacher: Let's talk about your picture.

Student 2: Here is the mouse and the picture. (Points to the tree and to Biff).

Teacher: What is the ear for? Don't ears belong on faces?

Student 2: Nooooo, (laughs). If you click on the ear a lady reads the book for you.

Teacher: Wow that is neat! Does it help you?

Student 2: Ya...I don't need help anymore. I can read a book by myself! Can I read one for you?

Teacher: You sure can. (Turns on the laptop)

Student 2: (Enters into e-book program, clicks into TRUNK story folder) this is the one. (Begins reading title by clicking on the ear. The title is read to him and he repeats. Smiles wildly. See!

Student 2: (Continues clicking on the ear symbol and says) I can click the word too. Look. Clicks on the word *wet*. The word is read to him and he repeats. (He reads the sentence over again, pointing to each word and saying it, by himself.)
He returns back to his illustration and points to the ear. See that is what I use to help me.

As Student 2's confidence and enthusiasm for reading grew, so did examples of his reflective work (Week 5). In this example, Student 2 has finished reading the last story in the ORT Stage 2 series (*The Pet Shop*). The following excerpt details an observation from my field notes made in the afternoon of June 16, 2009.

Field Note:

June 16, 2009 1:50pm - I am observing Student 2 monitoring his movement around the classroom and his behavior. He begins by moving towards the building center, where there are already four students engaged in play. He pauses and scans around the room. Student 2 finds a computer has opened up and moves towards it. He sits down, places the headphones on, chats to his neighbor about what program he is on. Student 2 opens up the ORT Stage 2 e-book. Clicks on the e-book *Toy Party* and begins reading it. Student 1 passes by and Student 2 calls him over. They both sit down and read the book together. They choral read stopping twice to hear a word they were unfamiliar with. Student 1 is called over to read with the educational assistant and Student 2 continues. He returns to the main screen and clicks on the last book in the series *The Pet Shop*. He states out loud he is not finished with the computer. Runs quickly to the ORT book box and rifles through the book bags. He locates the paper based version of the story and walks back to the computer. He sits back down and then spots me.

Student 2: I got the book I am reading it two times. (Student 2 referring to the digital and the paper copies of the same book he has acquired).

Teacher: That is awesome! What do you plan to do with the books?

Student 2: I am gonna see if they are the same.

Teacher: Do you think they will be the same?

Student 2: Ya, they got the same things.

Teacher: What same things?

Student 2: The cover is the same. (Points to the screen and to the paper book). He opens the paper book and points to page 2. He uses the page arrow to turn page 2 of the e-book. Look it is the same.

Teacher: Take another look? What tool can you use in the e-book that you can't use in the paper book?

Student2: (Moves back to the e-book, resumes looking at the screen). It don't have the thingies.

Teacher: What do you use the icons for?

Student 2: I can hear the words.

Teacher: Yes, it helps you with words you don't know. What else can the icons do?

Student 2: (Points to the ear icon) this one helps with the words. (Points to the glasses) This one makes the story move.

Teacher: Can you make the paper one move?

Student 2: (Thinks for a moment), no this book doesn't move, but I can get one that does.

Runs (runs) to the book box and retrieves a pop-up book. (Returns and hands me the book). This book moves. I like books that move. Do you?

Teacher: Yes I like books that move also. My favorite is my butterfly book by Eric Carl.

Student 2: I like that one too.

At the end of the conversation, Student 2 demonstrated amazing personal growth and development in regards to his focus and control over his actions, his understanding and willingness to share his ideas with an adult not to mention extending his understanding into areas outside reading.

This example (see Figure 17) details work produced by Student 3 (Week 6, June 23 2009). He was observed reading a book about *New Trainers.* At the end of the session he took a Camtasia screen shot of the page he enjoyed reading the most. When observing Student 3, I watched him use the e-book icons to support his reading. He read the book independently sounding out unfamiliar text and sharing his experience with others. By clicking on the ear icon each sentence was read back, allowing him to navigate through the e-book independently. Each word he required support with was highlighted in red and followed by the narrator's voice reading each word back. At the beginning of the study, this student was unable to sit for extended periods of time when reading. He was uncooperative and easily distracted. Six weeks later he was able to support himself when reading a book. Figure 17 demonstrates his ability to access the printer, to print this accomplishment and add it to his portfolio. He then shared this work piece at a group conference.

Figure 17: Portfolio work sample produced by Student 3 that was shared during an individual conference

The following field note entry chronicles Student 3's development.

Field Note:

June 16 2009 10:30am - Sitting with Student 3. He pulls out a paper from his portfolio. It is a screen shot of *The New Trainers.* He sits down quietly with the paper in front of him.

Teacher: This is a great screen shot! I think this is my favorite book. I love getting new shoes. What about you?

Student 3: (Nods head). He got new trainers in the picture, but got them wet. He got in trouble too! (Smiles). It was funny.

Teacher: Tell me what happened in the story?

Student 3: Chip went to the shop and got new trainers. Then he went out playing and he wasn't careful. He fell in the puddle and got in trouble when he went home. His Dad was mad.

Teacher: Wow, you have really worked on your retelling. I am very proud of you! Every detail is in there. Let's look at some of the words in the text. Is that okay? Bring me the laptop.

Student 3: (Retrieves the laptop, starts up and goes directly to the book). Here it is. Can I read it to you?

Teacher: I would love that…Let's begin.

This example highlights how e-books have influenced these students' attitudes and motivation towards reading, confidence to share opinions and most importantly a wish to continue reading.

4.1.1.2.3 Question 2 Trend 3

This third trend addresses an increase in high frequency word recognition. Over six weeks, there was a noticeable improvement in all students' high frequency word recognition and recall. Figure 18 illustrates the steady improvement in the Dolch High Frequency Word list.
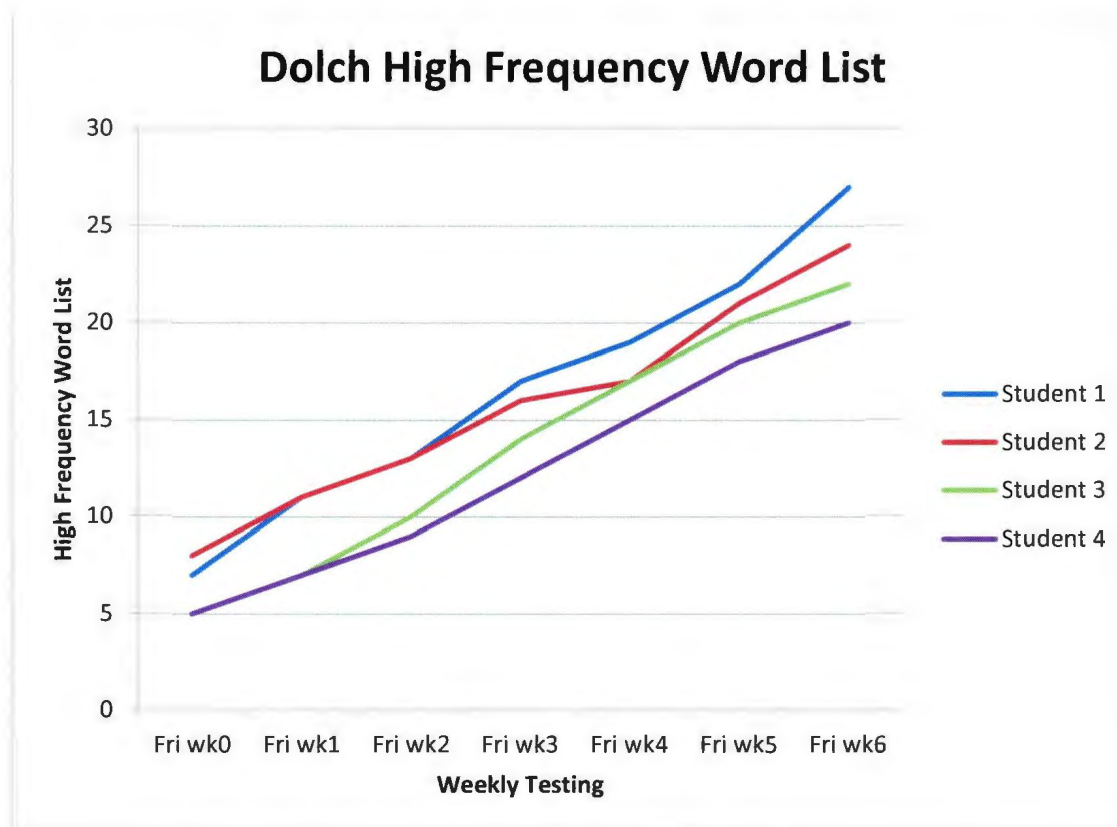
Figure 18: Represents the Dolch High Frequency list students used over the six week study. Week 1 word count = 5 words/Week 6 = 30 words.

In order for students to participate in the action research study, each child had to recognize at least 5 high frequency words from the Dolch list. Baseline data revealed Student 1 began with 7 words, while Student 2 had 8. Both Student 3 and 4 were tied with 5. During Week 0 the student average word knowledge was 6.5. In Week 1 the average student word recall had increased to 9 words, by Week 3 rose to 14.75 words and in the final week of the study rose to 23.25 words. Therefore the average word recall over seven weeks was 18.1 out of 30 words from the Dolch High Frequency Word list.
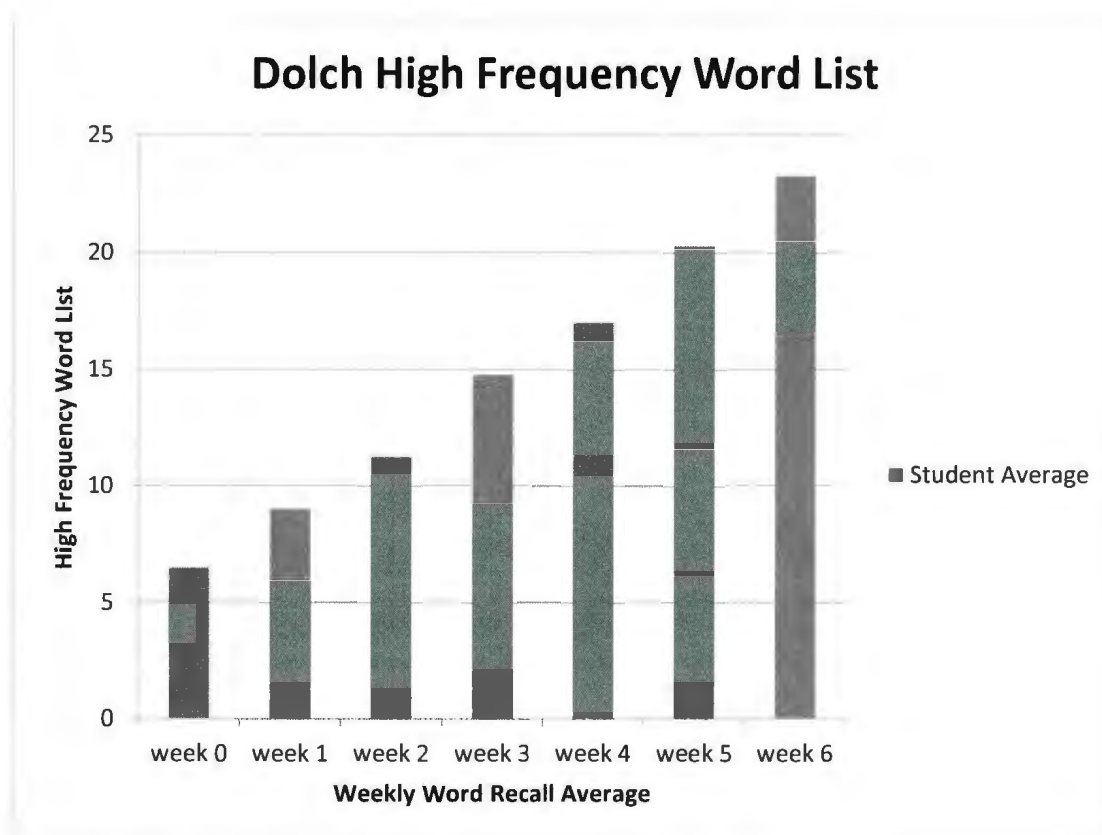
Figure 19: Illustrates the weekly average word recall from the Dolch High Frequency word list.

This is an important factor as students were being exposed to high frequency words through the e-books their overall recall improved (see Figure 19). This improvement can be attributed to help features such as narrator support.

This section provides individual examples outlining how High Frequency Word recall can impacted students reading. This first example (see Figure 20) is a screen shot of Student 1 using the single word building feature offered in the Stage 2 ORT CD-ROM e-books. This extension exercise is designed to augment not only sentence development but High Frequency Word recall. The sentence Student 1 constructed was from the ORT Stage 2 e-book *The Pet Shop*. In this activity there are three columns. The first column features characters from the text.

The middle column features a focus on High Frequency Words. The final column features objects that were discussed in the story. Once the word is clicked on, an illustration appears supporting the word identification. If the reader required narrator support, the ear icon reads the word back. Using the click and drag feature each word is deposited at the bottom of the page to compose a sentence. Once the sentence is completed, the narrator reads it back and the Student decides if it sounds right. Student 1 composed a sentence *Biff wanted a goldfish*. Not only did Student 1 compose a sentence, he made a personal connection between the e-book and his gold fish (named Bubbles). From here Student 1 took that experience and wrote about it in Figure 20.

Figure 20: This example illustrates Student 1 using an extension exercise supporting sentence development.

Immediately after this session, Student 1 went directly to the writing activity where he began writing in his computer journal. Details of the illustration and writing were recorded within my field notes. A copy of the illustration was printed and placed in his portfolio (see Figure 21).

Field Note:

June 22, 2009 10:00am - Student 1 concludes book *The Pet Shop.* He gets up and moves to his friend's activity group. He watches and discusses what they are doing.
Observing each encounter with classmates he was engaged, asking questions, but did not interfere in the activity. He starts up the laptop and opens 2Simple Create a Story. He gets up to retrieve "The Pet Shop" ORT Stage 2 reading book. Returns to the activity table, flips open the book and begins scanning each page. He settles on when Floppy is chosen to come home as a family pet. He begins typing his story first past observations noted he always began with an illustration. Interesting! He begins typing entering a capital letter /M/ and makes the /m/ sound. He repeats the word, slowing down the pronunciation /m/ /i/. Next word he begins on is /fish/. He produces the /f/ sound moves to the /i/ repeating /fish/. Student 1 struggles with blends such as /sh/. This is evidenced as he completes the word /fis/. He moves to the illustration and draws an orange gold fish in a bowl. Student 4 passes by and comments how the fish will need water in the bowl. The water is quickly placed in. Student 1 returns to typing and begins sounding out the fish's name. He continues his next word beginning with a /d/ and then replacing it with /b/. He appears unsure of the letter sound. Continues /u/ and then again miscues /d/ for /b/. He concludes /l/ /e/ /s/. He then looks at the word and reads the sentence back /my/ /fish/ /bubbles/. Returns to the illustration and places the fish bowl on a brown table. He looks over at our fish tank and places in a green plant. The next word he writes is /he/ from memory and relays his sentence out loud /he/ /is/ /a/ /fish/. Using the high frequency word book he flips through and finds /is/. He types it in and re-reads his sentence again /he/ /is/ types in /a/ and begins trying to sound out /fish/ again. He saves his work into his working folder and leaves the activity (10:27am). Sustained activity 27 minutes.

Figure 21: Illustrates Student 1 using his high frequency word knowledge and strategies for sounding out unfamiliar words. He is discussing his fish named Bubbles and that he likes his fish.

In my next example, Student 2 placed a work sample in his portfolio. This excerpt outlines his progress. Figure 22 details how he was able to use strategies from the e-books and the strategy card to write about his book.

Field Notes:

June 26, 2009 10:10am - Student 2 observed writing in the journal. I approach and sit down.

Student 2: (Points to Mum on the screen) /m/u/m...mum...writes mum on paper. (Points to Floppy) says Floppy. Then begins initial sound /f/.../l/.../op/ /e/.

Teacher: What wonderful work you are doing sounding out. What strategy are you using?

Student 2: (Pauses and thinks) I use the card and the computer.

Teacher: Those are good strategies. Is there another strategy you used?

Student 2: (Pauses once again, looks down at writing.) I know how to spell (I)...and (like)...is this how you spell (this).

Teacher: Let's listen to the sounds. (makes the /th/ sound)

Student: (Continues to miscue /th/ sound for /v/).

Teacher: The word /this/ can be broken down into two parts. The first is the /th/ sound (spelling the /th/ out). Next we can find the word /is/ hidden. (Writes out the word for Student 2). Here is the /th/ and here is the /is/.

Student 2: I know how to spell is. /i/ /z/. (smiles at the teacher).

Figure 22: Is an example of an illustration depicting the scene where Floppy is chosen as a family pet by Mum and Biff. Student 2 has written a sentence using high frequency word knowledge to communicate a message.

4.1.1.2.4 Question 2 Trend 4

The fourth trend focuses on retelling and comprehension. The following examples (see Figures 23 and 24) highlight Student 3's growing reading awareness. These excerpts also detail not only a change in attitude but also a willingness to participate independently in retelling activities.

Field Note:

May 18 2009 10:30am - Student 3 called over to do reading activities with the Educational Assistant. He was playing at the water activity. Called three times, each time did not respond. She went over and brought him to the reading table. On the table there was a number of stage one ORT books spread out along with story sequencing puzzles. He said he wanted to go play and he didn't like to read and proceeded to have a temper tantrum under the table. The Educational Assistant looked across at me and we concluded this activity.

Field Note:

June 15 2009 10:30am - Student 3 observed at the computer completing a sequencing activity "The Go-Kart". He was quiet and focused on the monitor. He was listening intently to the narrator's instructions. He told the children who were speaking around him to go away, he was listening. The children moved away to another area in the classroom. Student 3 began clicking on the second frame moving it in to the first box. He yelled out "the lady said I got it right!" He smiled wildly then returned to the next story frame. He read through the second frame and stopped at the word "/fight/. He began sounding out /f/ /i/ then stopped. He clicked on the word and it was read out. He repeated the sentence again and commented "I know it goes here". "Look it is in the book". He looks up at me and displays the book. "First and look that is next". He places the book down and clicks on the last pane. I ask him if he has read it. He returns back and reads the pane. The narrator begins reading the text highlighting each word in red. Student 3 is pleased with himself. He leaves the activity.

Figure 23: Student 3 takes a screen shot of his *before and after* work and saves it into his portfolio.

Figure 24: Student 3 has completed the sequencing activity independently. Once the activity is completed, the narrator reads back the story sequence.

In this final example (see Figure 25) this screen shot demonstrates Student 3's ability to recall specific facts from the story *The Headache*. Student 3 selects from facts presented in the story and matches them up. If the student has difficulty with reading the words, help features are available.

Figure 25: Example demonstrating an improvement in Student 3's comprehension.

The DRA was used to verify if reading awareness had improved (see figure 26). Testing took place June 22, 2009. It was noted that each child had made substantial growth in all areas of their reading development. Student 4 demonstrated the most growth beginning at DRA Level A and achieving Level 6 in six weeks. Student 3 demonstrated steady growth beginning also at Level A and achieving Level 4. Although his development demonstrated the least amount of growth he did however display consistent use of strategies when attempting to sound out unfamiliar words. In Student 1's case, he was an emergent reader at Level 2 when entering the study. My goal for this student was to support his strategy development by increasing his reading engagement. His results rose from Level 2 to Level 8. Student 2 posed the same engagement and motivational issues and at the end of the observation period rose from a Level 2 to Level 6.

Developmental Reading Assessment (DRA)

■ Term 1 Reporting Feb. 2009

■ Baseline Participant Testing May 14, 2009

■ Final Participant Testing June 22, 2009
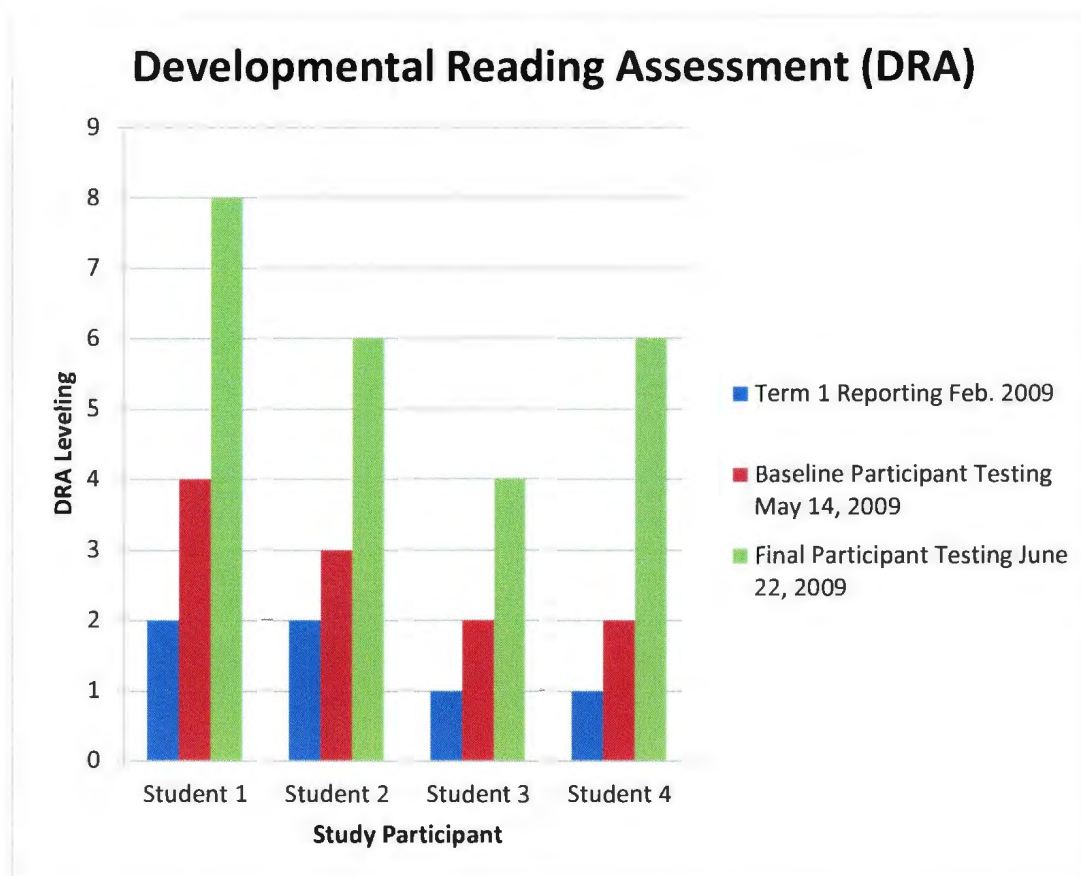
Figure 26: Graph outlining each student's developmental reading assessment baseline and finishing point.

4.1.1.3 Question Three: What is my role in supporting emergent literacy through the use of e-books?

In this next section I reflect on how the action research cycle has facilitated my professional development through critical roles I assumed. One of the most important roles I assumed was that of 'teacher and researcher.' It was through the process of reflection and professional observation that I was able to identify elements within my own practice which required changing. As illustrated in Figure 27, the role of teacher-researcher was my starting point but quickly extended to that of listener and nurturer as I gained confidence and

understanding. Although the role of teacher-researcher was the central focus, professional development happens when there is a blending of roles. It was through this process of developing *listening skills*, that I was able to explore reading strategies in greater depth. The role of *nurturer* allowed me to work with children on a closer level creating a learning environment that was tailored to their needs. It also allowed me to continually evaluate the effects these changes had on the students in a cyclical fashion. Additional sub-roles I assumed were reflected through the action research process and included observer, recorder, reporter, analyzer, interpreter, and organizer. By following this structure of inquiry, I was able to place strategies into action evaluating progress made until I achieved the results we needed. The final roles I held were that of collaborator, facilitator and motivator. When this study began, my goal was to effect change within my classroom through independent action research. Thinking I was unique in the school I began my project without consulting my co-workers. As the study progressed, I was running out of ideas to support students. I discovered the pace at which events happen, required immediate suggestions. As my confidence grew, I found myself talking and discussing classroom situations with co-workers and colleagues. Their ideas, knowledge and expertise were invaluable to me. Their interest developed as my study progressed. I found the more I shared the more this study became collaborative. As teachers wanted to participate in inquiry studies, we found ourselves exploring other digital alternatives for struggling children. In effect, the action research cycle, impacted not only on the students and myself, it also impacted on what was happening within our school.
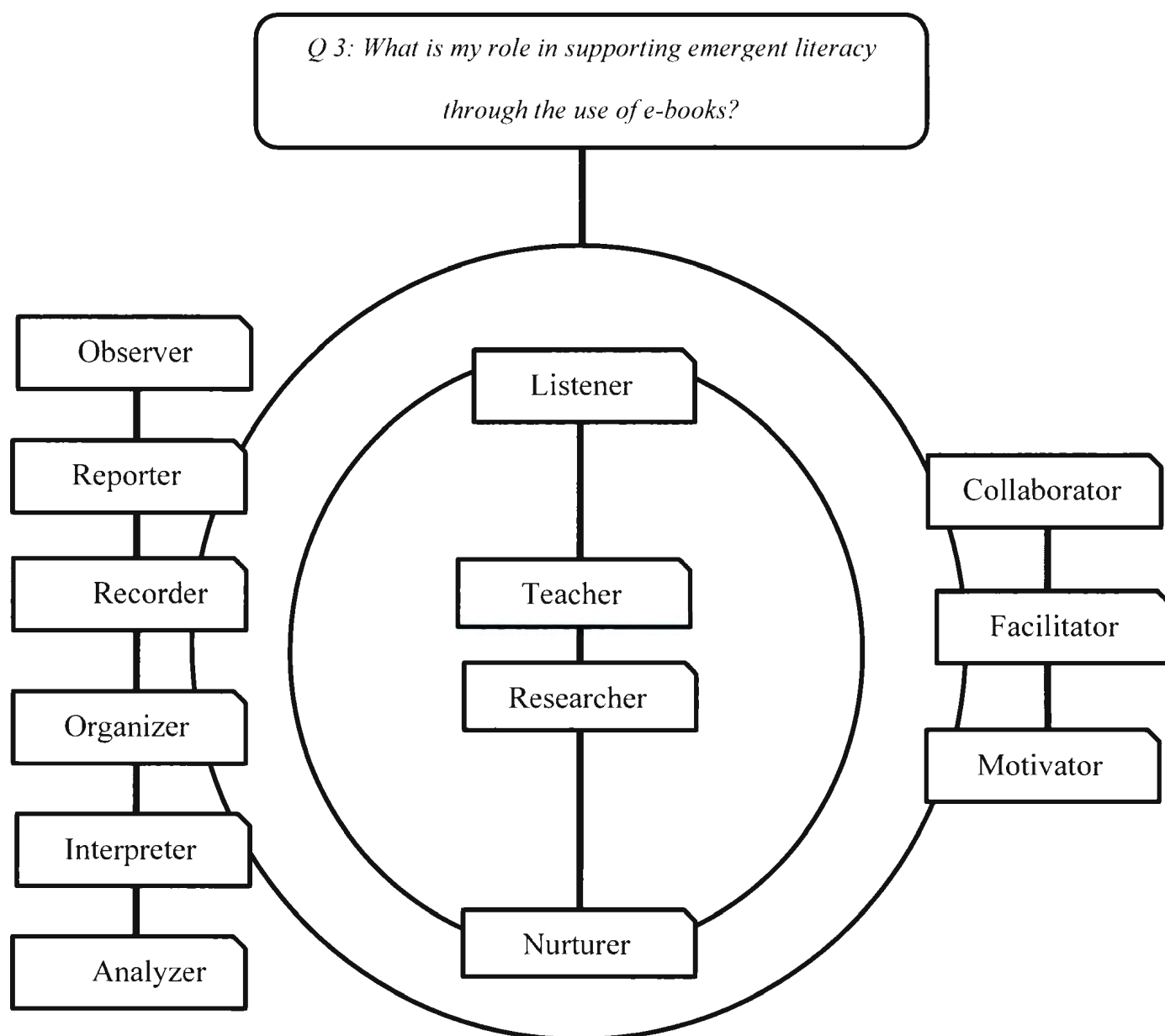
Figure 27: Concept map illustrating my central role as teacher-researcher while using the roles of listener and nurturer to acquire information through the action research process.

This next example highlights information gathered in both my field notes and journal. The field notes supported the recording of events as they occurred, whereas my reflective journal encouraged me to listen and re-think events through, questioning the actions through the thoughtful and reflective lens of a teacher. These next 2 examples highlight how the role of *listener* and *nurturer* were used within the action research cycle to plan and develop next steps for each of the participants.

4.1.1.3.1 Entry 1, Nurturing

Field Note:

June 1, 2009 09:40am - Student 4 observation: Student 4 using e-books help features. Clicking on hotspots, watching animation, but is not participating with the narrator.

Reflective Journal:

June 1, 2009 11:35am - Student 4 remains quiet when he is reading e-books compared to the other 3 students. This is not usual behavior for him! *Target: talking with Student 4, demonstrating reading along with the e-book narrator and have another student model this behavior for him, follow up Friday at conference.* Question: Is he intimidated to record his voice using the microphone? Might benefit from additional time with other students recording their stories at the Listening Centre. Strategy: (1) After lunch, have teaching assistant take Student 4 aside modeling reading alongside the e-book narrator. (2) Pair Student 1 with Student 4 using the dual microphone jack to model the shared reading/recording experience, listening back to their story. (3) Place student at the Listening Centre a couple of times through the week. (4) Spend some time with Student 4 reading – recording and listening back to himself. (5) Follow up during conference time discussing how we sound using the computer to record our voice.

In this example, I have highlighted how 'following up' through conferencing supports phonological development, and enhances confidence by using strategies and resources children are familiar with.

Field Note:

June 3, 2009 1015am – Student 4 conference

Teacher: Hi there, thanks you for leaving your activity to come and talk with me.

Student 4: Okay.

Teacher: I have a word we are going to practice sounding out. You can use the paper and markers to help you.

Teacher sorts through 5 words from the book "A New Dog" stage 2. The paper based book is in front of the student along with the laptop turned on at the title page of the story. Paper and markers are in front of the student along with the ORT Strategy Card.

Teacher: Now then, let's choose a word from our pile.

Student 4: (Flips over a card) I saws this word in my book.

Teacher: That is excellent. You are remembering words you have read.

Student 4: /w/ that is the first sound. (Points to the strategy card symbol).

Teacher: Yes that is the /w/ sound. Let's try our next sound.

Student 4: /e/ ..../w//e/...
Teacher: continue on you are doing a great job.

Student 4: /w//e/.../n/ /t/....beings blending the sounds together.

Teacher: Can you hear the word yet?

Student 4: I heard /went/...is that right?

Teacher: Let's find out. Where can we go for help?

Student 4: (Moves the computer over and flips through the pages until he finds the word went. He clicks on the work and the narrator reads back /went/). I did it.

Teacher: You certainly did. I am so proud of you trying this today.

Student 4: Can I try it again?

Teacher: Let's do it...!

During this session, I made an important observation about Student 4 realizing he needed *nurturing,* encouragement and support in his reading sessions. I offered additional exploration opportunities through teacher support, e-book reading sessions, and sharing his experiences in one-to-one conferencing and within small group situations. At the end of the study, Student 4's reading confidence increased along with his decoding ability (such as sounding out unfamiliar words initial/final sounds and using diagraphs and blends). When reflecting on the role I had assumed, it was through this method of supportive activities that I was able to implement strategies designed to enhance learning.

4.1.1.2.2 Entry 2, Listening

Field Note:

June 2, 2009 9:45am - Observe Student 1 and Student 3 using the ORT reading books. Student 1 began clicking and reading along with the narrator. Student 3 echoing Student 1, looking at him when he was saying the words rather than reading from the screen. Encouraging Student 3 to look at the screen, use his mouse to click on the words, wait for the narrator to read, and repeat it back. Student begins following the directions and continues to practice. Both Student 1 and Student 3 click and read the words. Student 1 uses the (ear icon) to replay the whole sentence. Student 3 repeats action, mumbles words (5 words in sentence), catching two words. Student 1 saves his work and then plays it back for Student 3. Both students laugh and smile when they listen to themselves. Student 1 leaves computer and goes to work at the Art Centre. Student 3 remains and is observed to replay the story again, clicking on words and repeating them.

Reflective Journal:

June 2, 2009 11:30am - Definitely the use of a mentor was of benefit to Student 3. Student 1 was demonstrating the skills he had been using to help Student 3 read the e-books. This demonstrates that Student 1 has been able to apply reading strategies which are supported by the e-books. Note: Concern (Student 1 is reading at a higher level than Student 3). This learning gap was evident when Student 3 was trying to read back higher leveled Stage 2 books. Strategy: Have Student 3 set up the computer and use Student 1 as a guide (telling him what to do rather than showing)…to encourage Student 3's reading at his own level.

In this example, Students 1 and 3 used Camtasia to record their onscreen mouse action along with their voice recording. This method allowed both the students and I to replay their work highlighting which strategies were being used and which could be applied with greater effectiveness.

Field Note:

June 2, 2009 1:40 pm - Teacher: Student 1 and 3 please come over to the computer. (Both students arrive at the same time). You know how this morning, Student 1 was reading to you....

Student 1-3: Ya.

Teacher: I would like from now on for Student 3 to read to you. Is that okay? I want you (Student 3) to use all the strategies we have been practicing, and you (Student 1) to watch him do it. If he forgets I want you to remind him what he needs to do...don't tell him...
I will give you an example.
(Goes to the computer and sits down. I am you.... (smiles) Student 3 and you are going to play yourself (Student 1). Okay...Oh my I don't know this word... (Instead of you saying the word for me...I want you to remind me what strategy I can use.

Student 1: Like this....you can use the ear...

Teacher: Yes or can you remind me in a sentence... (like) where can you look?

Student 1: I can do that.

Student 3: Smiles and beings reading the book (The Toy's Party).

The next session will discuss how the roles of observing, reporting, recording, analyzing, interpreting and organizing plays a vital part in the management of data.

4.1.1.3.3 Entry 3, Observer, Reporter, Recorder, Analyzer, Interpreter and Organizer (Action Research Cycle)

Field Note:

June 2, 2009 1:45pm- Students taken aside for 10 minutes to record and play back their video. Teaching assistant went over how to listen to their recording. When replaying their recording back, the teaching assistant focused on the e-book and cuing strategy card

pictures to help them decode words. Students appeared to be mirroring one another using the icons of the cuing strategy card.

Student 4: (Points to the computer screen and then motions to the cuing strategy card.) "Look at the picture."

Student 3: "I see floppy."

Teaching Assistant: "That is really good. You have used our book and our card to help find a word. Look at the picture again. What is Floppy doing?"

Student 3: "He's running."

Student 4: "He's running to Chip."

Teaching Assistant: "Okay, what do we do next?"

Students 3 and 4: (Both students look at the cuing strategy card. Then they point to Step 2.) "Look for words we know."
Teaching Assistant: "Yes, that is the next strategy. What do we need to know?"

Student 3: "Some words."

Teaching Assistant: "Yes, that is right. We look for words we know and also the sound, because these will help us crack the word into parts so we can sound it out."

Student 3: "/F/…" (Looks at the picture and sees Floppy.) (Repeats) "/Floppy/ /c/ /a/ /n/…" (Clicks on the word and repeats back /can/.) "I know that word."

Teaching Assistant: "Okay, let's go back and read the sentence from the beginning using our finger to follow."

Students 3 and 4: (Follow on the screen reading the words) "/Floppy/ /can/…/r/…"

Student 4: "…/run/ that is run."

Student 3: (Clicks on the word and the narrator reads the word back) "/r/ /r/ /u/ /n/…/run/…"

Reflective Journal:

June 2, 2009 3:40pm - I feel this was a positive experience for both Students 3 and 4 today. The extra time the teaching assistant was able to devote to them helped solidify the use of the card (strategies and e-book features) along with boosting their confidence when reading. More so for Students 1 and 2 as their reading confidence is different. They are not afraid to press buttons and watch for results. Students 3 and 4, I feel, have

overcome that. I will keep monitoring their participation and interaction with the program along with using the e-book features. I am wondering if the program had the ability to help the students begin the sounding out process, would they benefit more. Using the cuing strategy card along with having the ability for the children to have the word read back to them is of greater value as it encourages application of the strategy process.

By using the action research cycle I was able to use documents such as my reflective journal to annotate possible options, and the field notes to monitor the results. Through this ongoing process I was able to determine if additional adult support was necessary to guide students when using the decoding and cuing strategy. Although the ORT program offered individual word and whole sentence support, it did not offer the student decoding or cuing strategy suggestions. As a result, students were given group instruction about how to use our cuing strategy card. The addition of this strategy card played a role in bringing together both the e-book and conventional strategy usage.

4.1.1.3.4 Entry 4, Continuation of the Action Research Cycle

Field Note:

May 20, 9:30am - Students are using the both the eye and the glasses icon, but I am not observing students trying to sound out the words on their own. Student 1 was observed, he is quite proficient at using this resource. He is able to click on each one of the support features, but in his recordings I am not hearing him develop a sounding out strategy. Suggestion: Try introducing our strategy card and have students follow the steps on the card to support their phonological development. Monitor until the end of the week.

Field Note:

May 20 1:30pm - Participants were called to a quick group meeting. Discussion about using the (paper) strategy card along with the computer support (figure 28). The importance of using the strategies to help sound out words before clicking on the (ear) icon was discussed. Encouraged to continue taking into the microphone and telling me what they are doing. Cards placed on table along with a book box of the ORT books.
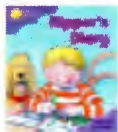
Strategy Card

1	Look at the picture
2	Look for words you know
3	Finger follow 👆
4	/c//at/ ⬆ First sound
5	/c//at/ ⬆ Onset and rime

Figure 28: Conventional cuing strategy card used to support students. Numbered steps guide students with picture cues supporting phonological awareness and decoding.

Field Note:

May 20 2009 2:00pm - Student 1 and 2 were at the computer. They logged on and began reading. Student 1 had the card in front of him. He reminded Student 2 to get the card. He also asked what book Student 2 was reading and threw the book over to him. Student 1 began clicking through the book. He was reminded to read the text and if he came across a word he didn't know use the strategy card. He flipped back to the beginning of the book and said the name (Chip). He moved onto the next word. I told him to use the strategy card. The first cue was to look at the picture. (He said he found Chip). Next was to look for words he knows. He point and said /and/. Finger following was next and encouraged Student 1 to look at the words and read directly from the text. He stopped at the word

Floppy and said, "I can use the ear now right". I relayed "yes you can but let's try the sounds first. He started and sounded out /f/ and /l/ and then made the connections it was floppy's name. He clicked on the word and checked it with the narrator. Target: Review strategy card and computer strategy support to monitor progress.

Figure 29 is an example of using the reflective cycle to investigate a problem, documenting the need, making suggestions, implement a strategy to support the students and then evaluate the progress is part of the action research cycle. The following is an excerpt from my field notes and a screen shot of a conversation between Student 1 and Student 4.

Field Note:

June 4, 2009 9:40am - Student 4 was set up at the computer. Discussion with Student: Encourage Student 1 to (tell) then (show) Student 4 how to use the sounding out strategy. Student 1 was observed using the initial sound strategy, next letter, and also chunking. He used the help e-book features such as clicking on the single word and also replaying back the complete sentence. Modeling this behavior for Student 4. Observation: Student 1 was talking through his strategies as he was doing them and then showing Student 4.

Student 1: "Are you stuck?" (Picks up the strategy card.) "Look."
(Points to direction 4 on the strategy card.) (Sounds out first letter) "…/c/."

Teacher: "That is great, Student 1. That is the strategy I would use also. I see the /c/… let's point to it." (Student points to /c/). "That is great. What do we do next, Student 1?"

Student 1: "I see /an/. I know that. I blend together now …/c/an/…can. See?"

Teacher: "That is great, Student 1. Let's try that together sounding out the word. /c/.../a/.../n/. Can you hear all the sounds? /c/ /a/ /n/…?

Student 1: "Ya! /c/a/n/."

Student 1: "Click on the word to see if you got it right."

Student 1: (Clicks on the word, narrator reads the word can back to student.) "I got it right! /c/a/n/."

Teacher: "That is great. Let's try the next word."

Student 4: (Looks at Student 1, he points to the cuing strategy card. He scrolls down the list to #4.) "I got to sound it out. /s/…" (He looks at the /ee/ and relays short vowel sound /e/e/.)

Student 1: (Motions to Student 4 /ee/ hand signal.)

Student 4: (Relays the /ee/ sound) "/ee/."

Teacher: "We have all the sounds now to put it together. /s/ee/." (Blends the sound together more quickly.)

Student 4: "/s/ee/…see. That is see." (Clicks on the word and continues reading.) "Yes, we can see you." (Clicks on the replay icon.) (Repeats sentence back clicking on the words as he said them back.)

Figure 29: Camtasia screenshot for the story *Hide and Seek*. It was necessary to use direct teacher support and the cuing strategy card to support foundational learning of initial letter-to-word identification.

From this reading exercise, Students 1 and 4 were observed to be applying both the *sounding out* and *decoding* strategies with growing accuracy. When using the action research cycle to observe each of the student's reactions, planning and implementing modifications as

they progress, there was a noticable difference in their attitude approaching the decoding of words. The action research cycle allowed me to track changes I was making, along with students progress in a systematical fashion.

As these four excerpts demonstrate, I played the key roles of listener and nurturer. My role as listener helped me to identify, plan, assess, and evaluate both strategies and apply the one most suited to their immediate needs. My role as nurturer encouraged and supported their learning needs by providing relevant reading experiences, building confidence and reading independence. Using the action research cycle, provided a reflective cycle I needed to identify problems and work through solutions methodically.

4.1.1.4 Question Four: What is the effect on classroom practice when emergent literacy is supported through the use of e-books?

The fourth and final question examines the effects on classroom practice and climate (see Table 6). I approached this final question by examining how the research has affected classroom practice for students, teacher, and the school.

Classroom practice revealed an increase in students' sustained reading and a positive change in their reading behaviour. There was a ripple effect within their writing and other areas of their learning such as art and drama. These students who were interfering with others learning in the past, were now active learners themselves wanting to share their successes with their friends.

Within my practice, my focus shifted from the management of behaviour to increasing time spent supporting reading and teaching strategies. It was through developing my role as a listener and nurturer that I was able to effectively access and address the needs of the students. Interestingly, the various roles I assumed throughout the action research cycle were transferred to

the school community as a whole. It was through open discussions around action research and the need for inquiry within the classroom did colleagues become involved in my research study. As a result data was shared and the findings discussed. This process of transparency made my study visible to others and became an important step in my professional development. By doing this, it became evident that many of the issues I was experiencing were common within other classrooms.

Calhoun (2004) identified individual teacher research as a way of approaching a problem within a classroom where the teacher actively seeks a solution. She pointed out that a side effect of individual research can be keeping the information collected within the classroom rather than sharing it with others. It was intially through casual discussions with colleagues and during staff development meetings I discovered how interested others were in my research problem. The simple act of sharing data sparked interest in how digital media (such e-books) can be used to support struggling readers. Although I continue to develop my role as listener (both in the classroom and in other areas of the school), I am gradually using my understanding of the research process to guide colleagues through a collaborative research process. As an individual action researcher, I found it helpful early on to seek advice from colleagues. This sharing of information through a collaborative team approach defined my growth as a researcher. These teachers served as my balance throughout the research process, providing an objective form to present findings and discuss strategies.

From the results of this study, our school has now begun examining whether or not older students who require additional support to strengthen both decoding and cuing strategies would benefit from this type of reading opportunity.

4.2 Conclusion

The purpose of this study was designed to improve not only my professional and personal understanding about emergent reading, but to also provide struggling readers with a set of reading strategies. Some of the key findings from this chapter highlight how e-books can be used to motivate children who are resistive to begin the reading process. It also brought to light how using the e-book improved high frequency word recall, story sequencing and overall comprehension. The result from this study was that e-books can be used to support phonological development. Although the CD-ROM program was unable to separate letter sounds for individual words, it however supported students in the development of alternate reading strategies. At the conclusion of the study, children demonstrated an increase in confidence, concentration and overall independence. As a result, student's demonstrated their understanding in other areas of their learning such as investigating conventional paper based reading books, into their writing and oral language.

Through the action research cycle, I was able to investigate each problem systematically placing it into context and investigating the impact on other areas of children's learning. By using data sources such as field notes, a reflective journal, student portfolios supported the tracking of strategies in a progressive responsive cycle. When I took the opportunity to share my findings with others in the primary division, comments were made about how they were experiencing the same problem with students. By sharing and creating a collaborative form, I was able to move my findings from the classroom into the school.

Chapter 5: Conclusion

5. 1 Introduction

This chapter will discuss the study's purpose and present implications of the findings in the classroom and beyond. It will also argue how this study is able to contribute to future literature while examining its limitations and lessons learned. This chapter will also discuss the process of action research and how it has supported my professional development and next steps that will be taken. Finally, I will reflect on how my research study carries with it the potential to support teachers and further research.

5.2 Purpose of the Research

The purpose of this study was to examine how my Senior Kindergarten students' emergent literacy could be supported within a CAL environment that incorporated e-books. More specifically, this research examined the effects on emergent readers' phonological awareness when using the decoding strategy with e-books. Furthermore, this research supported me, as a teacher-researcher in developing strategies that could be used to support emergent readers.

5.3 Research Questions

The first two questions were concerned with supporting emergent literacy through the use of phonological awareness and decoding strategies in a computer assisted learning environment. The next two questions examined the roles I assumed and how it improved my classroom practice as a result.

5.3.1 Question 1

A computer assisted learning environment is a learning tool designed to be interactive, illustrating concepts through alternative animation, sounds and demonstrations. Zucker, Moody and McKenna (2009) relayed that students in a classroom that used a CAL environment could be supported through self-paced activities that are easily differentiated and offer immediate feedback. This type of learning environment engages the students capturing their attention and reading focus (Moody, Justice, & Cabell, 2010; Zucker, Moody, & McKenna, 2009). During my study, participants were immediately engaged, followed directions carefully, listened to the narrator's instructions and were reading independently from the start. Children gravitated towards the text to speech learning opportunities and illustrated animations. Students quickly learned that using supportive strategies, such as *the ear icon*, activated the narrator fostering reading independence and problem solving. As a result, students' reading engagement increased over the course of six weeks. I also discovered since the frustration levels were reduced for these students, reading became an activity that was enjoyable and to be shared. Observations revealed students were completing follow-up activities without support, sharing their work with their peers and building on their prior knowledge. Researchers such as Korat (2010) and Korat and Shamir (2004; 2007; 2008) commented that many e-books commercially available emphasize multimedia, colors, sounds and graphics, and are not necessarily suitable for promoting young children's language and literacy skills. Before implementing the CAL environment, I ensured that the interactive programming met curriculum expectations I had set for each student. Throughout the study, students were monitored ensuring the quality of the reading experience equaled that of teacher/student reading time.

As many of my students rely on the school/teacher to provide daily reading opportunities, e-books provided the students with support. No longer having to manage behavior, I was able to devote more time to reading with children. A finding that was uncovered after the study was completed was that parents who were unable to read with their children due to a number of factors, enquired about e-books as a source of reading material for their children. A number of researchers commented although e-books offer the student a dynamic reading experience, it is different from sitting near or in the lap of a parent sharing storybooks together (Korat, 2010; Roskos, Brueck, & Widman, 2009; Segal-Drori, Korat, Shamir, & Klein 2009). If that lap is unable to support children's home reading, an alternative such as e-books would be there to foster engagement and skill development, not to mention the love of reading independently.

5.3.2 Question 2

This section will discuss the effect on phonological awareness when using a decoding strategy with a CAL environment. There is an abundance of research investigating the development of emergent literacy and oral language through the use of story books (Bus, De Jong, & van Ijzendoorn, 2007; Hindman, Connor, Jewkes, & Morrison, 2008; Martin & Silva, 2009; Senechal & LeFevere, 2002). More specifically early reading has been noted to support language and literacy skills such as letter and sound identification, oral language development and print awareness (Dickinson & Tabors, 2002; Moody, Justice, & Cabell, 2010). When considering a supportive reading strategy that can be used to scaffold oral language, letter to sound awareness and print awareness in my class the e-book is one such resource. Although there is growing research into the use of e-books to support literacy development (Moody, Justice, & Cabell, 2010; Wood, 2005; Segal-Drori, Korat, Shamir, & Klein, 2009), researchers'

such as Underwood & Underwood (1998), Shamir, Korat and Barbi (2008) and Neuman (2009), noted some features designed to motivate emergent readers actually encouraged passive reading affecting comprehension. This was not the experience of this research study. Features such as animated text and illustrations, encouraged the readers to follow along with story events. The ORT CD-ROM series offered emergent readers an engaging and interactive environment that fostered strategy development. This reading series offered emergent readers design features which fostered phonological awareness, expanded alphabetic understanding and contribute to oral and written language skills (Korat, 2010; Korat and Shamir, 2004; 2007; 2008). Sergers and Vermer (2008) stressed this type of resource carries with it the potential to foster word and letter recognition, strengthen vocabulary, improve comprehension skills and motivate the emergent reader. Results from Sergers' and Vermer's (2008) research are supported in my findings. The results of this study concluded there was an increase in high frequency word recognition, improved comprehension in their phonological awareness which carried through into other areas of their learning such as writing. Therefore, the e-book can offer the emergent reader additional opportunities to read independently through in-built supportive features designed to foster knowledge and reading understanding along with reading strategy development.

5.3.3 Question 3

In this section, I will reflect on how the action research cycle facilitated my professional development through critical roles I assumed. One of the most important roles I assumed over the course of this study was that of 'teacher and researcher'. The role of teacher-researcher facilitated the reflective process of looking deeper in problems. The key issue driving this study focused on supporting daily reading. An issue we have within our community is some parents are unable to read with their children during the evening. If I were going to support these children in

school, I would need a learning tool that engaged them in the reading process. I examined a number of paper based reading alternatives, but children remained resistant. I reflected on what the children liked to do in their play time. As the computer was a hot spot in our classroom for the majority of our behavior children, this presented as an alternative. When a small group of children were monitored using the computer, each was engaged, focused and remained on task. The introduction of an e-book was a natural choice to facilitate reading engagement. This reflective practice was supported by using the action research cycle to guide each step of my thinking process. It also helped me to identify and address roles within my professional practice that would foster positive change. When examining some of the roles I assumed, the most important was that of 'teacher and researcher.' Although I found my role of teacher-researcher was at the heart of my professional development, I found many other roles merging through. It was through the process of developing my *listening skills* that I began explore reading alternatives in greater depth. The role of nurturer allowed me to use the action research cycle to implement structured changes, evaluate the effects, and revise these changes so students could take away skills that would support their emergent reading. Sub-roles reflected through the action research process included observer, recorder, reporter, analyzer, interpreter, and organizer. By following this structure of inquiry I was able to put learning into action that would be carried forward into their home lives.

5.3.4 Question 4

The final area to address is the effect on classroom practice when using e-books. When examining the effects of my classroom practice, I found I looked deeper into the causes or contributing factors of behaviors and practices. This is a critical area to develop within my own professional practice. Another area I examined further was my method of doing research.

Originally starting as an individual action research study, I found I needed the support of my colleagues to discuss issues I was experiencing. When conversations were had, commonalities were found in regards to issues we were all experiencing in our classrooms. This sharing of ideas, suggestions, techniques and their research supported my development. As a teacher researcher I am more willing to share findings and address problems on a collaborative level, rather than keeping them in the classroom.

When considering the effects on the students when they used e-books, I have discussed with their Grade 1 teacher how these students were able to increase their phonological awareness, reading comprehension, reading enjoyment, behavior and high frequency word knowledge through the use of e-books. Following these students 1 year later (June, 2010), their teacher reports these four students remain engaged and reading levels continue to improve. For my own practice, I have continued to support children with the access of e-books (ORT CD-ROM and Online Reading Series, Reading A-Z, RAZ Kids and Star Fall). As a result, my behavior management incidents have reduced significantly and I am able to support all emergent readers within my class.

5.4 Future Contributions

The findings from this study made several important contributions to current literature. First, although there are only a few studies that have investigated the use of computer assisted technology through children's interactive books, these studies have suggested that the benefits outweigh the disadvantages (De Jong & Bus, 2002; Hassett, 2006; Hezroni, 2004; Shamir & Shalfer, 2011). Secondly, the use of e-books are able to support not only emergent readers' phonological and strategy awareness (Chera & Wood, 2003; De Jong & Bus, 2003; Littleton, Wood, & Chera, 2006; Reinking & Bradley, 2003), but was able to significantly impact on

students' reading independence and exploration (Hezroni, 2004; Snyder, 2002; Zucker, Moody & McKenna, 2009), confidence (Moreno & Duran, 2004; Segers & Vermer, 2008; Shamir & Korat, 2009), oral language and sight word development (McKenna, Reinking, & Bradley, 2003; Segers, Takke, & Verhoeven 2004; Segers & Vermer, 2008; Shamir, Korat, & Barbi, 2008; Korat & Shamir, 2006; 2009), and comprehension (De Jong & Bus, 2003; Doty, Popplewell, & Byers, 2001; Labbo & Kuhn, 2000; Shamir, Korat, & Barbi, 2008). The findings from this study support these conclusions. The group of students who participated in this study were found to have improved their phonological awareness, high frequency word recognition, story sequencing, sentence building and over all comprehension. Additional areas that displayed improvement were behavior, confidence, focus, engagement, reading enjoyment and finally there was a cross over into other areas of their learning. Towards the middle of the study, as my confidence as a teacher-researcher developed, I presented my findings study to the Grade 1-3 teachers in the primary division. When discussing the results with them they appeared interested in following their own group examining the same issue. Our division is now engaging in a collaborative research study focusing on continuing the development of e-book software and introducing internet sites that can be used to support the development of reading within and out of school.

As a result of these findings, the school has invested in online reading resources for both students and teachers while in school, but has broadened their investment into the community. The school is now supporting parents' involvement when using online reading resources as a way to continue reading at home.

5.5 Limitations and Lessons Learned

Despite the many instances of successful utilization of the ORT software within my classroom, some difficulties I experienced were in relation to my preconceived expectations held and features promoting cuing and phonological strategies. This issue is specific to my student population's socio-cultural demographics, having a marked delay in their reading exposure. To resolve this issue, it was necessary to make accommodations with a paper based strategy card (already in use within the class). An example of this can be evidenced in my reflective journal.

Reflective Journal:

June 2, 2009 3:40pm - I feel this was a positive experience for both Students 3 and 4 today. The extra time the teaching assistant was able to devote to them helped solidify the use of the card (strategies and e-book features) along with boosting their confidence when reading. More so for Students 1 and 2 as their reading confidence is different. They are not afraid to press buttons and watch for results. Students 3 and 4, I feel, have overcome that. I will keep monitoring their participation and interaction with the program along with using the e-book features. I am wondering if the program had the ability to help the students begin the sounding out process, would they benefit more. Using the cuing strategy card along with having the ability for the children to have the word read back to them is of greater value as it encourages application of the strategy process.

When reflecting on the independent action research approach, this learning opportunity has served as a template to develop my skills as a teacher-researcher. By keeping the study cohort small, I was able to manage variables, document evidence, organize it, examine and interpret the results and implement the next steps. A concern I had throughout the study was maintaining 'order' within the confines of the classroom. As I was completing this study independently, during school hours, I would have benefitted from additional classroom support during the observation phase of the research. This opportunity might have allowed me to follow the participants through each one of the reading transition stages facilitating greater perspective into how the e-book was able to support their reading understanding.

At the beginning of the study, a behavior analysis was done measuring the frequency at which certain behaviors were being exhibited while reading. The results from this measurement were astonishing and concerning since my time to support other students was being dominated by behavior management issues. Reflecting on this issue after the study was completed, a time analysis would have provided data on how many minutes I was losing due to behavior management and how the e-books have changed the balance of reading time with other students.

One final area to address was an opportunity to use a video camera. The study used an on-screen capturing mouse tool called *Camtasia*. This program also provides the listener with a digital recording of the conversation. While this was an excellent format to use, listening to the conversations, I would have benefited from examining from a video perspective of the students and what was taking place around them while they were engaged in reading the e-books. At the time of the study, our school was supporting a 'no video recording of children' policy. Since then, the policies have been updated to include video recording of students who participate in inquiry studies with parent's permission.

5.6 Action Research: What was learned

An area I continually strived to improve was my ability to critically reflect on observations that were made in order to develop solutions supporting student learning. When beginning this study, I examined the ORT software setting bench marks I would use to assess the effectiveness of the ORT CD-ROM program. I based my judgment on information provided by the manufacturer and my experience using the program. As previously stated, although the software met the criteria for increasing phonological awareness, it did not however meet our needs. Recognizing the obvious gap within the software for this demographic of children, I could potentially help develop an e-book that would cater to my emergent reader's specific learning

needs. This will ensure when students' are participating in an e-book reading experience, support features will be accessible digitally and seamlessly incorporated rather than using a paper based prompt sheet. It was through this reflective process that I was able to use the action research cycle to identify and implement changes to meet the immediate learning needs of the students. Using critical reflection supported continued exploration and investigation of e-book alternatives (CD-ROM , DVD and e-books through the internet).

5.7 Next Steps

When examining where I want to go from here, we have made plans as a school to examine the effects of e-books on children from Grades 1-3. The program we are looking into will be able to support children at home and at school. This online resource has leveled e-books that the reader can use independently. Following the same format as the ORT CD-ROM e-books, this series uses narrator support helping the emergent reader develop strategies. Since this program provides the reader with narrator support, parental participation is optional. Students reading can be followed through reading into a microphone and sending it quickly and securely back to the teacher for analysis. As a way to promote reading within our primary division, it would be interesting to examine the effects of e-books when introduced earlier in Junior Kindergarten and if this introduction would impact on later phonological and decoding development. This reading opportunity can present young children with the necessary prior reading experience and exposure to printed text (Chera & Wood, 2003; Sergers & Vermer, 2008; Shamir, 2009; Shamir & Korat, 2009).

5.8 Further Research

Researchers such as Moreno and Duran (2004) and Neuman (2009) suggest that young children are able to adapt well to technology they are exposed to on a daily basis. Technology is consistently applied at home in the context of entertainment, as well as being incorporated in the school based curriculum, but as far as the classroom is concerned, reading is very much an aspect that would benefit from better use of available technology. I would hope that as technology usage increases in the educational environment, more studies will emerge that can help explore the use of CAL in the classroom. I feel the study holds useful, practical and interesting findings that would positively help support children coming into the Senior Kindergarten classroom in the future.

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Appendix A
Invitation Letter to Parents

Sharon Feero
Senior Kindergarten Teacher
Moosonee Public School
P.O. Box 250 Moosonee, Ontario
POL 1YO
705-336-2300

Dear Parent

Many of you know I am a graduate student at Memorial University, Newfoundland. As part of my studies I am examining ways to improve my teaching in Senior Kindergarten and would like your child to participate in my action research study within our classroom. Action Research is a critical reflection process the teacher uses to look at what is happening in the classroom and to search out ways to improve their teaching.

My action research study will look at reading in Senior Kindergarten and how I can better support children who are learning how to read. Children love using the computer in the classroom and come to school with great computer skills. The study will look at reading, using a computer and special electronic books called e-books to help children use a strategy called decoding. Decoding is a special set of skills we use when we learn how to read. It is important these skills are developing when they make the transition from Senior Kindergarten into Grade One so they become confident readers.

This study will last a total of six weeks beginning in late May 2009 and will involve 4 students who are 5 ½ years old who will be chosen from our Senior Kindergarten class. The listening center is a popular place in our classroom. Children enjoy sitting down and having a book read to them. I would like to use the computer to support children in their reading. The study will use a software program called Oxford Reading Tree Click and Explore Stories that are on CD-ROM . Each group of stories follows in a progressive series which allows the child to master words and progress to the next reading level. Each text uses different high frequency word vocabulary to promote independent reading. The program offers the new reader plenty of help with sounding out words, reading pace and understanding what the story is about.

The children who will be included in this research study will not miss any regular class time. The software the children will be using follows the Oxford Reading Tree text base series. The children will be exploring the same text, just in digital format. Each student will use the reading software program daily during our Drop Everything and Read Time (DEAR). Children's work will be recorded using an, onscreen software called Camtasia. This a tool used to capture on screen clips or screenshots. I will be able to play back the child's session and view learning as it takes place. Children will also be encouraged to print out the work they have generated during the session and place it in their personal work portfolio (PWP). Please note at no time will

the child be video-taped, photographed or have their photo digitally recorded for this study. The child's name will not appear in the study and each child will have a pseudonym given to protect his/her identity. Any work samples will also have any form of identification removed and will be coded using the pseudonym.

As part of the data collection process, children who are included in this study will participate in an informal interview for 10-15 minutes on Monday, Wednesday and Friday. During this time, they will discuss their feelings about using the program. There will be a weekly group session, again lasting no more than 10 minutes, where I will talk to everyone included in the study, gathering their perceptions and feelings about their reading on the computer. These sessions will be recorded using an audio tape. All data collected (including data files, portfolio work, and audio recordings) from this study will be stored securely, and will be stored for five years. After that time, the data will be destroyed. The information collected will be used for this research study. It will also be used within our teacher professional development meetings at the school to improve literacy instruction. In the future, it could be used to further teacher understanding outside the school in scholarly journals.

Both you and your child have the right, to stop the study at any time - "no questions asked". All the information collected to that point will be removed and destroyed. Should you have any questions or concerns please do not hesitate to contact me, Sharon Feero at 705-336-3422 or e-mail me at s.feero@yahoo.ca. If you wish further information on the study itself or have questions or concerns you may contact the ICEHR Chair, Dr. Larry Felt (phone: 709-864-8368, e-mail: chricehr@mun.ca.), Dr. Tim Seifert (phone: 709-864-4470, e-mail tseifert@mun.ca) or Dr. Karen Goodnough (phone: 709-864-3315, e-mail: kareng@mun.ca)

I am holding an information session on May 20th, 2009, at 4:00pm in my classroom where you and your child can come and use the program. Please sign the below interest form, should you wish your child to be included in this study. I look forward to seeing you in the near future. Thank you for your time. Please sign and return at your earliest convenience.

Sincerely,

Sharon Feero
Senior Kindergarten teacher

Please circle the appropriate response, sign and return to Sharon Feero, Senior Kindergarten teacher.
(   ) - I would like to find out additional information on May 20th, 2009.
(   ) - I would like to find out additional information, but am unable to attend the scheduled session. I will call you to discuss this further.
(   ) -   I am satisfied with the information I have received and would like to have my child participate.

Parent/ Guardian Signature _____   Date _____

Appendix B
Invitation Letter to School Board

Sharon Feero
Senior Kindergarten Teacher
Moosonee Public School
PO Box 250 Moosonee, Ontario
POL 1YO
705-336-2300

Dear Mrs. Faries:

I am a graduate student attending Memorial University and I am seeking permission to conduct an action research study within my class. Action Research is a critical reflection process the teacher uses to look at what is happening in the classroom and search out ways to improve their teaching. The area I am going to focus on is supporting reading within the classroom and using computer assisted technology. The software I will be using is based on a reading scheme the school uses to support emergent readers. The Oxford Reading Tree Electronic book series offers the teacher an opportunity to increase the amount of supported reading within the classroom, along with providing children with decoding support which is offered through the software. The children are given a learning environment which is supportive, inclusive and designed to help children acquire decoding strategies. This study will last a total of six weeks beginning the latter part of May 2009 and will consist of 4 students who are 5 ½ years old who will be invited to participate from my Senior Kindergarten class.

The listening center is a popular place in our classroom. Children enjoy sitting down and having a book read to them. Like the listening center, the computer carries the ability to support emergent readers. As an alternative, I would like to introduce the computer as a tool which can support the students reading. The study will use the Oxford Reading Tree Click and Explore Stories that are on CD-ROM . Each group of stories follows in a progressive series which allows the child to master words and then progress to the next reading level. Each text uses different high frequency word vocabulary to promote independent reading. The program offers the new reader plenty of help with sounding out words, reading pace and understanding what the story is about.

The children who will be included in this research study will not miss any regular class time. The software the children will be using follows the Oxford Reading Tree text base series. The children will be exploring the same text, just in digital format. Each student will use the reading software program daily during our Drop Everything and Read Time (DEAR). Children's work will be recorded using an, onscreen software called Camtasia. This tool is used to capture on screen clips or screenshots. I will be able to play back the child's session and view learning as it takes place. Children will also be encouraged to print out the work they have generated during the session and place it in their personal work portfolio (PWP). Please note that at no time will the child be video-taped, photographed or have his/her photo digitally recorded for this

study. The child's name will not appear in the study and will have a pseudonym given to protect their identity. Any work samples, will also have any form of identification removed and will be coded using the pseudonym.

As part of the data collection process, children who are included in this study will have an informal interview done for 10-15 minutes on Monday, Wednesday and Friday, for 6 weeks, to discuss their feelings about using the program. There will be weekly group sessions, again lasting no more than 10 minutes, where I will talk to everyone included in the study, gathering their perceptions and feelings. These sessions will be recorded using an audio tape. All data collected (including data files, portfolio work, and audio recordings) from this study will be stored securely, and will be stored for five years. After that time, the data will be destroyed. The information collected will be used for this research study. It will also be used within our professional development meetings at the school to improve literacy within the primary level and in the future could be submitted for publication in order to further action research within this area. Children who are included in this study, along with their parents, will be notified in writing and through verbal discussions should they wish to withdraw from the study are free to do so at any time. They will be advised that any of their information which has been collected will be destroyed. A signed consent form will be obtained from the parent and the child. Copies will be kept by me in the secure file.

This study proposal has been discussed with Carol Birnie and she has agreed to support me in this activity to help improve literacy within the school. Should you have any questions or concerns please do not hesitate to contact me, Sharon Feero at 705-336-3422 or e-mail me at s.feero@yahoo.ca. If you wish further information on the study itself or have questions or concerns regarding the process, you may contact the ICEHR Chair, Dr. Larry Felt, (phone: 709-864-8368, e-mail: chricehr@mun.ca), Dr. Tim Seifert (phone: 709-864-4470, e-mail tseifert@mun.ca) or Dr. Karen Goodnough (phone: 709-864-3315, e-mail: kareng@mun.ca).

I look forward to your reply. Thank you for this opportunity.

Sincerely,

Sharon Feero
Senior Kindergarten Teacher

Appendix C
Parent Consent Form

Please return this form to Sharon Feero, Senior Kindergarten Moosonee and Area District School.

I have read the letter describing the study that will be implemented in my child's class. I understand that my child's participation in this study is voluntary and that my child may withdraw at any time.

_____   I approve my child's participation in this research study.

_____   _____
Child's Name   Date

_____

Signature of Parent/Guardian

If you would like to receive a summary of the results of this study, please write your name and a complete mailing address in the space provided below. Thank you.

_____   Yes, I would like to see a summary of the results of this study.

                    My full name and mailing address are:

_____

_____

_____

Appendix D
Child Consent Form

Dear Mrs. Feero:

I want to take part in your study.

I know you are looking for ways to help us read in the class using the computer.

I understand I will never be asked to do something I am not comfortable doing.

If I don't want to do the study any more, I can quit at any time.

I understand Mrs. Feero needs to call mommy to let her know what I want to do.

I can sign my name _____ Date _____

Administering Directions:

- o Please read the questions carefully to the child.
- o Ask the child if he/she understands what is being said to him/her.
- o Have the child check off the boxes as they are being read. Point and read the words and then point to the appropriate box.
- o The child may use a pencil tick, stickers, or stampers to show his/her agreement.
- o Have the child sign his/her name.
- o Date the form.