THE IMPACT OF AN INTEGRATED IPAD DAILY MULTILITERACIES PEDAGOGY ON ELEMENTARY STUDENTS' READING ACHIEVEMENT, SKILLS, ENGAGEMENT, COLLABORATION AND LEARNING, AND SELF PERCEPTION

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Abstract

This study investigated the impact of the absence and presence of digital technology as part of a daily literacy program on second grade elementary students' reading achievement, skill development and engagement, collaboration and learning, and student and parent perceptions of reading ability and engagement. A mixed methods approach including PM Benchmark Assessments, video footage, questionnaires, and interviews, was incorporated. Students in the Integrated iPad Literacy Program (IiLP) demonstrated greater gains than students in the Critical Reflective Literacy Program which used an approach that did not include technology. Both student and parent perceptions paired greater reading engagement with greater reading ability. With findings suggesting that infusing technology, multiliteracies, and multimodalities into a literacy program positively impacts student literacy and thinking development, recommendations for altering current literacy programs are discussed.

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CHAPTER 1

INTRODUCTION

"Can you airdrop that text to me so that I can copy and paste it into *Second Fiction*? I need to search for a Google image that represents the main idea?" says Tanveer.

"Sure, but remember, you need to upload this to *Explain Everything*[1] and Vlog[2] your justification of the main idea using hyperlinks to videos, Wikispaces, and websites to show your understanding of the text," reminds Prabnoor as he examines the class co-constructed criteria.

"I've uploaded my project to YouTube and sent the link to my KidBlog[3]. When you get a minute, can you give me feedback so I can revise my work?" asks Jasteg of the other two boys.

"Yeah. Did you see what some girl in Australia said about my project? She even made connections to her work that she is doing and sent me her Educreations[4] project to look at," responded Prabnoor.

This conversation occurred between three 7-year-old boys in my second-grade classroom during an Integrated iPad Literacy Program session. To some, this dialogue may appear foreign, unfamiliar, and incomprehensible, yet to the students who worked with the iPads as part of their daily literacy program, this vocabulary became part of their everyday conversations. What follows in this dissertation are the results of a study on the integration of iPads in a literacy program designed for Grade 2 classes in an elementary school in Ontario, Canada. In this introduction, I provide an overview of pedagogical strategies, including the Daily 5, and I discuss the foundational terms used throughout this dissertation, such as multiliteracies, multimodalities, and other related pedagogies. I conclude with summaries of forthcoming chapters.

The conversation between the boys serves an important purpose: it highlights the impact of multiliteracies/multimodalities pedagogy on students. Yet most modern literacy programs do not reflect the rapidly evolving landscape of technology and society and the accompanying demands on citizens to be technologically-savvy problem solvers and innovators. For example, one literacy program that is

[1] Explain Everything is an interactive whiteboard app that allows multiple contributions and the insertion of text, video, hyperlinks, images, and word/Google Docs.
[2] Vlog is a term used to describe a video blog
[3] KidBlog is a safe online blogging site for students in grades K-12
[4] Educreations is an app that turns the iPad into a recordable interactive whiteboard

widely used in North American schools, particularly in the school where this study took place, is called the Daily Five (D5). A brief overview of the D5 will help to situate this literacy program in contemporary education and support my argument that a multiliteracies and multimodalities pedagogical implementation in all classrooms is necessary for current literacy classrooms.

The Daily Five

The D5 program was designed by two sisters, Gail Boushey and Joan Moser, both of whom are educators. In 2006, they co-authored *The Daily Five: Fostering Literacy Independence in Elementary Grades*, followed by *The CAFÉ Book: Engaging All Students in Daily Literacy Assessment and Interactio*n in 2009 and, most recently, a second edition of *The Daily Five*, released in 2014. Boushey and Moser (2006) argue that using the D5 structure is how students best develop reading and comprehension skills through five vital components: Read to Self, Work on Writing, Read to Someone, Listen to Reading, Word Work (Boushey & Moser, 2006). Within the daily rotation, learners participate in three to five of these activities where they are building and practicing their literacy skills. Simultaneously, the teacher is meeting with small groups of students or individual students explicitly teaching decoding and comprehension skills through the Comprehension, Accuracy, Fluency, Expanded Vocabulary (CAFÉ) method. According to its creators, using this literacy pedagogy allows for the integration of assessment and classroom discussions into daily reading and writing. Boushey and Moser also argue that this literacy system provides a way for teachers to structure their literacy program to include the necessary literacy components (i.e., reading, writing, fluency, expression, comprehension skills, vocabulary, spelling, and oral communication), thus increasing student independence and allowing for individualized attention to be given by the teacher to particular students and groups of students needing extra help. Boushey and Moser's 2006 book guides educators through the process of implementing this program in their own classrooms by providing a day-by-day script for each component, including how to teach the students the reading and writing strategies that they suggest make their program successful.

To address the shortcomings of this contemporary and widely popular literacy program, I will review the components that comprise the D5 and explain why I believe this program is failing today's students.

Read to Self

Read to Self requires students to read independently for a sustained period of time each day without disruption. The students are given the time to repeatedly read the same self-selected text to practice decoding and comprehension. During this time, the teacher works one-on-one with a student or a small group of students explicitly teaching students the CAFÉ strategies (Boushey & Moser, 2009) and learning the three ways to read a book including reading the pictures, reading the words, and retelling the story (Boushey & Moser, 2006).

Work on Writing

In the Work on Writing component, students are taught the behaviours of proficient writers, such as getting started immediately, staying in one spot, quietly doing one's work, writing for the entire duration of the designated writing period, and underlining unknown words (Boushey & Moser, 2014). The purpose of this component is for students to self-select the topic and text form and participate in daily writing practice.

Read to Someone

Read to Someone entails a student reading a text aloud to a partner and vice versa. The purpose of this component is to help students develop their comprehension, accuracy, and fluency by increasing their reading involvement, attention, and engagement. Students sit in the "elbow to elbow, knee to knee – EEKK" position and take turns reading to one another. This is the only component of D5 that fosters a cooperative learning context between peers. In this component, peers offer feedback to one another as a way of monitoring comprehension, which Boushey and Moser (2009) have named "check for understanding." A student selects a "same-ability" partner with whom to read. Peers would read the same leveled text together using an "I read, you read" approach, stopping at every paragraph or page to "check for understanding." If a student is having difficulty with a word, their partner will inquire if they need

"coaching or time" (Boushey & Moser, 2006), providing the student with strategy assistance or time to figure out the word on their own.

Listen to Reading

The act of listening to proficient and fluent readers provides students with an effective model to replicate pronunciation and expression. Books on CD, MP3, or online are provided and students will read along while listening to the expert reader.

Word Work

Word Work includes developing vocabulary and spelling skills and learning high frequency words through kinesthetic and visual means, such as using the body to create the letters or making the word using bingo dabbers or sand. Students use a variety of different items to create their words (e.g., lettered bottle caps, letter stickers, Cheerios).

There are some merits to the D5 program, including building literacy stamina, developing individual skills, and spending relatively equal amounts of writing, reading, and word work opportunities. However, based on my experience, this approach is limited by few opportunities for students to engage in collaborative work that helps to stimulate critical and creative thinking strategies. For example, the D5 offers isolated literacy components in which students are working independently for the majority of the literacy session, which in turn provides limited access to 21st century competencies such as collaboration, communication, and use of technologies to engage and support learning. Moreover, there is no inclusion of goal setting or reflection within the D5 program. Overall, based on my experience as an educator who used the program and observed a lack of successful student outcomes—including diminishing engagement levels and a plateau of reading gains when implementing the D5 program—I looked to other research to help modify the program and add crucial elements that I felt were missing. Interestingly, the D5 has very little empirical, published research to support its claims, especially surprising given its widespread implementation in schools and school districts. For example, there is an abundance of educator blogs and websites from across North America offering ideas to educators on how to implement the D5, yet there is no direct research-based literature on the D5 program. With no direct research

available on the D5, I looked to the literature on the individual components of the D5 as well as what theorists were saying about current literacy models and pedagogies. What I found was a disjuncture between pedagogy and theory and current practices. Researchers and current literacy theorists in the field of education—including multiliteracies, multimodalities, digital literacies, and technologies— propose a vision of literacy education that is quite different from D5. In the next section I provide an overview of multiliteracies, multimodalities, and their related pedagogies as a guiding framework for the Critically Reflective Literacy Program (CRLP) which forms the basis of this research and is explained fully in Chapter 3.

Multiliteracies and Multimodalities: An Overview of Key Concepts

In the mid 1990s, a group of ten educators and researchers (NLG, 1996) met in New London, New Hampshire, to address the impact and influence new technologies were having on society and the need for educational pedagogies to keep up with this shift. They devised an approach they termed 'multiliteracies' to describe how technology changes and globalization were affecting education (Kalantzis, Cope & Harvey, 2003). Multiliteracies were defined as literacies that included text, images, sounds, and other modalities. Further, the New London Group (NLG)[5] proposed a multiliteracies pedagogical approach in which a wide array of linguistic, cultural, and technological perspectives, tools, and strategies are used to better prepare today's students for a globalized world. The NLG (1996) argued that "many modes are encouraged to be used in different forms of expression" (Lankshear & Knobel, 2011, p. 85) and different technologies and communicative tools allow different modes to be used for different purposes. This new literacy pedagogy was contrasted with traditional pedagogical approaches that focused on a monomodal approach to learning, through text alone. An abundance of research over the past twenty years supports multiliteracies/multimodalities pedagogy (Borsheim, Merritt, & Reed, 2008; Kasper, 2000; Lotherington & Jenson, 2011; Tan & McWilliam, 2009; Taylor, Bernhard, Garg, &

[5] The New London Group consists of Cazden, C., Cope, B., Fairclough, N., Gee, J., Kalantzis, M., Kress, G., Luke, A., Luke, C., Michaels, S., & Nakata, M. (1996). A pedagogy of multiliteracies: Designing social features. *Harvard Educational Review, 66*(1), 60-93.

Cummins, 2008; Unsworth, 2001) demonstrating it to be a more relevant, engaging, and necessary pedagogy for its "manifest connections with today's communication milieu" (Cope & Kalantzis, 2015, p. 3). From my review of the work of the NLG, I found that Cope and Kalantzis' ideas on *Multiliteracies Pedagogy* (2000) and *Learning by Design* (2008) principles, combined with Kress's (2009) and Van Leeuwen's (2015) ideas on multimodalities, were ideally suited to offer an alternative that would empower learners.

The idea of multiliteracies is based on theories from sociolinguistics (Chambers, 2015) and social semiotics (Unsworth, 2006). There are two main components that contribute the 'multi' to literacies: communication patterns and contexts within society, and the modes by which these are accessed. Within a multiliteracies framing, one of the main components that comprises the "multi" in multiliteracies is that people derive meaning in multiple ways and are influenced by gender, culture, class, race, abilities, and sexuality. It is no longer sufficient to teach the standard grammar, spelling, and structural rules and literacy basics without considering how "cultural, social, or domain-specific contexts" affect literacy acquisition and application (Cope & Kalantzis, 2015, p. 3).

The second component that comprises the "multi" in multiliteracies is the acquisition of meaning through multimodalities such as "written-linguistic modes of meaning with oral, visual, audio, gestural, tactile and spatial patterns of meaning" (Kalantzis & Cope, 2012, p. 2). Although multimodal texts have been used in the classroom for years, it has only been within the past decade that they have be recognized as being necessary to student literacy learning in the 21st century (Bezemer & Kress, 2008).

Multiple modes, including sound, image, gesture text, and movement, are processed through communication (Rowsell & Walsh, 2011). Modes "inform how we make meaning, while multiliteracies, as a possible pedagogy, give us tools for doing so" (Rowsell & Walsh, 2011 p. 56). The D5, does not treat literacy as 'multi' or 'multimodal' because it operates on an outdated understanding of literacy as simply reading and writing text. This section has demonstrated that theorists and researchers have—as Marshall McLuhan (1964) put it—moved beyond the 'myopic focus' on text in the 20th century.

Didactic, Authentic, and Reflexive Pedagogies

In didactic pedagogical methods[6] Cope and Kalantzis (2015) identify the teacher as the expert who delivers information to the passive knowledge-receiving student. For the most part, the D5 program involves didactic pedagogical methods both in training teachers and delivering the program to students. From a teacher-training standpoint, the expert authority behind the D5 is the program produced by Gail Boushey and Joan Moser, which explicitly scripts word for word and step by step how the D5 is to be taught, implemented, and followed. Teachers implement this program in their classroom environment and assess how well the students execute the related skills. The didactic pedagogical approach is demonstrated at the student level. For instance, when involved in the activity Read to Someone, students have a specific memorized formula to follow when their partner struggles with a concept or word. This 'memorized' formula or procedure is also evident in the four other components (as clearly presented in Boushey and Moser's book, *The Daily Five* [2014], in that students are not required to engage in analytical dialogue or to participate collaboratively, critically, or creatively. Nor does the program require students to negotiate meaning in authentic and unique ways, thus conflicting with current multiliteracies theories (Cope & Kalantzis, 2015).

By contrast, "authentic pedagogy" (Cope & Kalantzis, 2015) involves students in controlling their own knowledge acquisition by means of actively engaging, investigating, and analyzing information in their lived environment. Learners are in control of their own learning. In the D5, providing students choice in their text selection in the Read to Self and Read to Someone components, as well as the freedom given in the Work on Writing component, could be considered "authentic pedagogy"; however, the element of choice is minimal and certainly not the immersive and personal experience described by Cope and Kalantzis (2015), who argue that didactic pedagogies cater to outdated educational methods. On the other hand, Cope and Kalantzis (2015) also argue that there are instances in which didactic pedagogy can

[6] An examination of strengths and weaknesses of didactic and authentic pedagogies and their epistemological bases culminated in reflexive pedagogy (Cope & Kalantzis, 2015, p.7-13).

be considered authentic when, for example, a concept or theory taught explicitly is valid, relevant, timely, and tested as such. Reflexive pedagogy, balances the shortcomings of didactic pedagogy with the strengths of authentic pedagogy. Using a reflexive pedagogy, students experience, conceptualize, analyze, and apply the hybrid meaning they make from multiple texts and communicative tools to their lived environment through language, culture, and technology (Cope & Kalantzis, 2015).

Cope and Kalantzis (2015) devised a model, or knowledge process, to accompany reflexive pedagogy called *Learning By Design* as a means to implement multiliteracies pedagogy. It includes four components, called "pedagogical moves" (p. 4). The first, "Experiencing," describes the way students use their experience of the known and unknown, the familiar and unfamiliar, "weaving"[7] what is learned in school with experiences outside of the school context, thereby propelling meaningful learning. The second pedagogical move is "Conceptualizing," which is focused on the distinct particularities of concepts and theory characteristic of those advanced by "expert communities of practice" (p. 4). Conceptualizing describes the incorporation of learning and instructional tools and techniques that guide students through the knowledge process to the systematic practices of the learning process in order to obtain a "metalanguage to describe design elements" (p. 4). The third move in the *Learning by Design* model is "Analyzing," which involves teaching students to critically question varying perceptions to ensure diverse learning experiences by means of evaluating power relationships and critically examining the consequences and pursuits of contributors through the process of communication. "Applying" is the final pedagogical move; it teaches students the application process of learning where they utilize concepts and thinking strategies they learn to solve real-life problems. This communicative process involves applying knowledge and understandings to multifaceted authentic and real situations. Students are making meaning of text and communicating their understanding of this meaning. Teaching multiliteracies using the *Learning by Design* model can enlighten, involve, and inspire learners to accept and support the multiplicities of pedagogical methods (The New London Group, 1996). However, an overall

[7] For more on the concept of weaving, see Luke, Cazden, Lin, & Freebody, 2003, p. 2.

understanding of the concept multiliteracies is not complete without addressing an important subset to multiliteracies: multimodalities.

Integration of Crucial Elements to the Daily Literacy Program

Because several key components were absent from the D5 program, I was prompted to begin the restructuring of my literacy program and undertook a pilot study. Having studied reflexive pedagogy (Cope & Kalantzis, 2015), I understood the importance of adapting my teaching to include metacognitive reflection (Iwai, 2016), goal setting (Ford & Yore, 2012; Marin & Halpern, 2011), peer collaboration (Pajares, 2006), and critical literacies pedagogy (Chamberlain, 2015). In the following section, I outline what I mean by each term—metacognitive reflection, peer collaboration and critical literacies pedagogies—as they provided a significant portion of the framework for this study.

Metacognitive Reflection

Metacognition is defined as "knowing how to think about your own thinking" (Iwai, 2016, p. 1). Research indicates that encouraging metacognitive reflection throughout literacy processes such as reading and writing contributes to increased success in reading behaviours and strategies, and moving students towards independence, interdependence, and self-efficacy (Greenleaf, Schoenbach, Cziko, & Mueller, 2001; Iwai, 2016; Marin, & Halpern, 2011). Further, students can become more metacognitively reflective through planned thinking and dialogue, both of which call students to understand their thinking process while providing opportunities to explore reading and writing strategies to reach their goals (Mackey & Jacobson, 2014). Reflection and dialogue allow for students' thinking to become more visible as they vocalize their thinking process and learn from the processes shared by their peers (Bannister-Tyrrell & Clary, 2014). In this way, metacognitive habits of mind are intentionally fostered in the classroom, resulting in improved reading scores and reading strategies (Hill, Brözel, & Heiberger, 2014). Finally, literacy researchers argue that for students to perform at high proficiency levels on literacy tasks and demonstrate advanced reading skills, metacognitive reflection is a requirement in literacy programs for these gains to be made (Ford & Yore, 2012; Magnusson & Palincsar's, 2004; White, Frederiksen & Collins, 2009). Based on this research and much more of its kind in the areas of language and literacy

(Adler, Zion, & Mevarech, 2015; Rosman, Peter, Mayer, & Krampen, 2016), I felt it important that I include opportunities for metacognitive reflection in the CRLP with goal setting being its complementary process.

Goal Setting

Educators can purposely embed goal setting activities into instruction to advance students' metacognition and improve literacy behaviours and skill development. Engaging in the task of goal setting requires a student to reflect and identify the areas in which he/she wants to improve and create "specific, measurable, attainable, realistic, and time-bound" (SMART) goals (Doran, 1981 p. 36) in order to develop the practices and measures needed to achieve the desired outcomes (Conzemius & O'Neill, 2011). Once students learn to think effectively about their thinking and learning (metacognition), they can begin to identify the areas they need and want to improve in, and then set goals to reach the desired end (Marin & Halpern, 2011). Goal setting, along with metacognitive reflection, peer dialogue, and collaboration are some of the predictors of success in reading achievement, thinking skill development, and overall academic achievement in elementary students (Desautel, 2009; Moeller, Theiler, & Wu, 2012; Souvignier & Mokhlesgerami, 2006) making their inclusion in CRLP warranted.

Peer Dialogue and Collaboration

Peer dialogue and collaboration support student literacy skill development (Cope & Kalantzis, 2009). Not only is it important to self-reflect and set independent goals in literacy, students also need to articulate their goals and learning to their peers (Van den Boom, Paas, & Van Merriënboer, 2007). Researchers argue that by allowing students to share their goals with their peers, they benefit tremendously both academically and in self-regulation because they are given necessary feedback and reassurance from their peers affording them the information needed to perform the steps required to achieve their goals (Desautel, 2009; Hadwin & Oshige, 2011). Students learn from their peer's personal literacy goals, in turn helping them to create enhanced, more effective goals themselves (Holton & Clarke, 2006). Peer dialogue, goal setting, and metacognitive reflection extend also to the provision of opportunities for students to work collaboratively. Working together allows students to discuss critical

topics, negotiate literacy misconceptions, present ideas and opinions, and receive feedback, thus enhancing their literacy experience and learning (Miller & Benz, 2008; Vass & Littleton, 2010). Finally, metacognitive reflection, goal setting, and sharing goals and work with peers results in higher student motivation and accountability, all of which support the attainment of their literacy goals (Pajares, 2006). With the lack of prospects for collaborative work in the D5, it was crucial to include peer dialogue and collaboration in the CRLP.

Critical Literacies Pedagogy

An additional component that is strongly recommended by literacy researchers is critical literacy pedagogy (Chamberlain, 2015; Luke, 2000; Street, 2003). Fundamentally, "critical literacy instruction in any content area is the attention to the interrelationships of language, power, and text" (Behrman, 2006, p. 497). Critical literacy pedagogy provides depth and breadth to the program and teaches students the necessary skills to be competent and successful literate beings by requiring learners to critically evaluate literature. It pushes learners to vigorously examine and evaluate texts and proposes approaches for identifying essential meaning within the text content (Unsworth, 2002).

Critical literacy education has been called a "theoretical and practical attitude" (Luke, 2000, p. 454), and it has been described as "a lens for learning integral to classroom practice" by the Ontario Ministry of Education (2009, p. 1). For the purposes of my research, critical literacy can be described as education that can cultivate social justice by asking learners to notice the influences of social interactions and consider how these affect discourse and language. Critical literacy aspires "to have students examine power relationships inherent in language use" (Behrman, 2006, p. 490), to understand that language is not unbiased, and to tackle their own biases, misconceptions, and morals in using language in varying contexts (Janks, 2000; Lankshear, 1997). When critical literacy is infused into current literacy programs, it exposes students to important and sensitive issues, allowing learners to begin to form and develop opinions based on sound evidence and, possibly, to bring about change (Coiro, Knobel, Lankshear, & Leu, 2014).

Although each of these pedagogical components—metacognitive reflection, goal setting, peer dialogue and collaboration, and critical literacy—were justified independently as important elements for the CRLP, it is important to note that when combined, these help to create an enriching and valuable literacy program which I argue addresses many missing features of the D5 and traditional literacy programs. However, these components do not address the need for students to construct meaning through multimodal means as afforded by the integration of technology and digital literacy in the classroom. To account for this gap I extended the CRLP program to include technology and developed the Integrated iPad Literacy Program (IiLP), designed for the purpose of measuring the effectiveness of technology as a teaching and learning tool for student literacy achievement.

Initiation of the Integrated iPad Literacy Program (IiLP)

The CRLP filled in many crucial gaps that I identified in the D5. The CRLP program (see Appendix A) included critical and creative thinking attainment, critical literacy inclusion, goal setting, consistent metacognitive reflection, and fewer solitary and linear literacy engagements; however, it was still lacking many compulsory components needed to equip students with 21st century knowledge, skills, and competencies. As I was interested in examining the use of technology as a teaching and learning tool in literacy programs as an influence on literacy achievement, I designed the IiLP to address how to make use of current multiliteracy and multimodality theories. By integrating technology into the CRLP, I felt that I would be developing 21st century literacy learners in my classroom.

Having introduced the CRLP into my second-grade classroom and seeing some gains in literacy skills, I was interested in investigating whether the inclusion of the iPad in the CRLP would further impact student reading skills, comprehension levels, collaboration, and engagement. I created authentic tasks using the iPads to extend students' understanding of a text, topic, and ideas[8]. I found that there was no conclusive evidence identifying specific technological components needed in literacy programs. Nor were there firm suggestions for effectively infusing 21st century features into literacy programs. I had to

[8] For a complete overview of the IiLP program and sample tasks refer to Appendix B.

use the limited research that was published as well as my own experience and expertise with technology integration to create the second literacy program, the IiLP, which is the subject of this study.

While implementing the Pilot Study, it became clear from student reading scores that when participating in the IiLP, students acquired more sophisticated and elaborate reading strategies and skills than when in the CRLP. I was astounded by the incredible reading and thinking gains made by students when using iPads compared the CRLP. This lead me to deduce that the addition of technology to a multiliteracies/multimodalities reflexive literacy pedagogy improved students' literacy abilities. The problem was that these results—like many research studies on the integration of technology in classrooms—were confounded because it was difficult to disentangle the effects of technology from the effects of the teacher. To overcome this problem, this dissertation involves the study of three Grade 2 classrooms over the course of 24 weeks. Specifically, this study investigated the impact of the absence and presence of digital technology as part of a daily literacy program on second graders reading achievement, skill development and engagement, collaboration and learning, and student and parent perceptions of reading ability and engagement.

Chapter Summaries

This introductory chapter identified the issues that were lacking in current literacy pedagogy and gave a brief overview of the CRLP and IiLP, programs that were developed to address the gaps noted in the D5. Chapter 2 provides a literature review related to the missing elements of current literacy programs, including the D5 from a multiliteracy/multimodality perspective, followed by a review of the literature pertaining to digital literacy and technology implementation in current literacy classrooms. It concludes with the limitations in the current research and makes the case for the Pilot Study. In Chapter 3, the Pilot Study is overviewed giving explicit details of its curriculum design, methodology, and results. Chapter 4 frames the Full Study, including the methods used and lessons learned from the Pilot Study. Chapters 5 through 7 present the findings, implications for practice, recommendations for future research, and limitations of the study. These chapters have been divided according to thematic elements, with Chapter 5 focused on Achievement: student achievements on a PM Benchmark standardized reading

comprehension and reading skill development test. Chapter 6 centers on "affect," particularly student and parent perceptions of reading engagement, comfort with technology, usage of technology, and involvement and achievement in multiliteracies. Findings demonstrate the relationship between self/child perception and reading behaviours and skill development. This proves to be an important indicator of success and literacy advancement. Chapter 7 addresses collaboration and learning indicators, specifically student collaboration and communication and how these competencies help to elicit key literacy skill attainment particularly when using a multiliteracies, technologically enhanced pedagogical approach to literacy activities. Finally, Chapter 8 concludes with a discussion of the relationships that exist between and within Chapters 5–7, with particular attention paid to the interconnection of results. This dissertation closes with recommendations for educators and researchers.

CHAPTER 2

REVIEW OF THE LITERATURE

> Teachers today are faced with the challenge of using multimedia techniques and multimodal literacies to provide a holistic learning experience…. teachers have to re-envision their teaching to include the diversity of their students in situated contexts. The shift from print based literacy practices to multimodal, multiliteracies has demanded a change in the manner in which teachers approach curriculum, planning and teaching.... Learners are faced with a challenging environment of local and global changes compounded by a complex amalgam of technological innovations…. (Cole & Pullen, 2010 p. 18-19)

With the growing and changing demands of the globalized world, curriculum and pedagogy need to keep up. Many classrooms are stuck using traditional methods that are not equipping students with the necessary skills to be 21st century literate learners (Falloon, 2015). Researchers are urging educators to implement a multiliteracies pedagogical approach to literacy instruction whereby students develop and acquire the necessary skills and competencies to be successful literate citizens (Cole & Pullen, 2010; Cope & Kalantzis, 2009, 2015; Guernsey & Levine, 2015; Jewitt & Kress, 2003; Mills, 2009). However, practice does not mirror theory. There is a large gap between what researchers are advising and what educators are implementing.

This chapter will examine the deficits in many popular literacy programs, focusing specifically on the D5 as a widely used program throughout North America, as word of it spread on teacher blogs and teaching websites. The chapter will then examine research from the New London Group (NLG), who provide arguments that pedagogical approaches, which include multiliteracies (Cope & Kalantzis, 2015; Cole & Pullen, 2010) and multimodalities (Jewitt & Kress, 2003) are required for students to reconstruct their understanding of their changing environment. Using Cope and Kalantzis' (2009) theories of design and their *Learning by Design* model (2015), theory and pedagogy can be merged to create a comprehensive approach to literacy instruction. The chapter will also describe the research on digital literacies and technological integration in the classroom. Finally, the chapter will conclude with an argument for the creation of a literacy program that addresses the needs of 21st century literate learners and makes up for the inadequacies of many literacy programs on the market today.

Research Relating to the Daily Five as a Comprehensive Literacy Program

Some attention has been given to both research and education in the design and execution of literacy programs (Dickinson & Neuman, 2007; Melhuish, Phan, Sylva, Sammons, Siraj-Blatchfor, & Taggart, 2008; Seidel & Shavelson, 2007; Vacca, 2002). Slavin and Madden (1989) argue that there is constant flux in the field of education from one literacy program to another, and typically a program is adopted prior to the release of any definitive data about the effectiveness of the program. When a program falls short of expectations, educators are quick to discard the program and replace it with the next literacy fad. In some instances, educators adapt programs to fit their needs and even publish their own versions of programs based on their experiences with the program, yet they do not document these experiences using systematic research.

Some researchers such as Harste (2003) argue that meaning making, language study, and inquiry-based learning are three components that should be included to create a robust literacy program. Allington and Walmsley (1995), Booth and Rowsell (2007), Calkins (2001), and Willingham and Lovette (2013) report that effective literacy programs need to take a balanced approach by including both writing and reading opportunities with an emphasis on word study and designated times set out in the day for students to perfect specific literacy strategies either in a small group or one-to-one with the teacher.

Several popular literacy programs currently used in schools today can be identified: Concept-Oriented Reading Instruction or CORI- Based Reading Programs (Guthrie, Van Meter, Hancock, Alao, Anderson, & McCann, 1998; Swan, 2003); Corrective Reading Programs (Marchand-Martella, Martella, & Przychodzin-Havis, 2005; Silbert, 2005); and Learn to Read Programs (Ehri, Nunes, Stahl, & Willows, 2001; McGill-Frazen, 1987). The attributes of these programs are presented in Appendix C. Attention will focus exclusively on the fourth program, the D5, due to its popularity and promotion within the Board of Education and school where the Pilot and Full Study took place. The D5 program uses a didactic pedagogical approach with a minimal use of authentic pedagogy (Cope & Kalantzis, 2015). The D5 has several key features that benefit student's reading skill acquisition but lacks a focus on multiliteracies.

The literature reviewing the D5 is limited to one school improvement project in North Dakota that began in late September 2014 (Department of Public Instruction, 2014), an independent inquiry project (Halbfoerster, 2011), and several doctoral and master's theses reviewing minor aspects of the program (Duty, 2016; Krausse, 2011; Peterson, 2011). Countless classroom teachers around North America informally report on the Daily Five through blogs, Wiki Sites and websites with respect to how the literacy program is being implemented in their classrooms. The only other published work on the Daily Five are the two books written by the program's creators, Gail Boushey and Joan Moser.

Of the literature on the D5, there is one response blog critique (Shanahan, 2012) that argues that the largest fault of the D5 is the focus on teacher activities as opposed to learning outcomes.

With such limited research and lack of definitive data on the efficacy of the D5 program as a whole, I am quite surprised by the intense advocacy for this program by some school districts in North America. Therefore, in the next section, I more deeply examine the literature related to the various components of the D5: Read to Self, Work on Writing, Read to Someone, Listen to Reading, and Word Work.

Read to Self

According to well-known teacher-writer, Regie Routman (2002), students should have the chance to read a self-selected "good fit book" independently for at least 30 minutes each day. When readers select a text, the purpose is to read and to learn to construct meaning in the act of reading. Johnson and Blair (2003) believe that self-selecting texts is crucial to the process of reading to the extent that learning and development are reduced without its inclusion into a reading program. This claim speaks to the importance that students be provided the opportunity to self-select text in which they are passionate and engaged in order to fully learn and develop. Of equal importance is the need for students to have control over selecting engaging and desired literature. Contrary to the literature (Lloyd, 2017; Stevens, 2016; Taylor, Hora, & Krueger, 2017; Tompkins, Campbell, Green, & Smith, 2014), many educators believe that learners are not effectively able to make vital decisions about selecting the appropriate text at the appropriate reading level that also has the necessary curricular ties (Johnson & Blair, 2003). In fact,

Johnson and Blair (2003) argue that children cannot acquire knowledge from a text if educators are not choosing quality literature from which to read. Yet, McLaughlin and Allen (2002) posit that when provided the opportunity, readers will positively choose texts that interest them and align with their reading ability level. Data suggest that students have the capabilities to make successful text choices that develop their emerging knowledge and increase their understanding of literacy (Foorman & Torgesen, 2001). Student self-selection of text supports the reflexive pedagogical approach outlined by Cope & Kalantzis (2015) and is one of the very few examples where reflective pedagogy is prevalent in the D5.

Another element from the Read to Self component with support in the field of literacy education is the value of retelling the text. For instance, Golden and Pappas (1990) examine ways in which semiotic choices—signs and symbols represented and communicated in language to create meaning—in retelling of texts affect the products and outcomes from these retelling contexts. In a review of 81 studies demonstrating important features and dimensions of retelling (e.g., subject, instruction, task delivery, procedure of recall, audience designation, form and source of text, retelling protocols, among others), Golden and Pappas argue that a child's processing of oral text is as much a cognitive task as a social one. Retelling of texts and recalling procedures are useful means by which processing texts can be captured and are therefore important components included in the ways to read a text. Golden and Pappas conclude by arguing about the importance of providing naturally compelling communication opportunities in which children retell texts to inexperienced and experienced listeners, a process which was lacking in the Read to Self component of the D5.

A different aspect of the Read to Self component is the opportunity for repeated reading practice. Boushey and Moser (2006) explain that with repeated practice in building independent reading stamina, students develop innate independent reading capabilities. Chafouleas, Martens, Dobson, Weinstein, and Gardner (2004) observe that readers may repeatedly read a text and their miscues may differ in surprising ways from time one to time two to time three. Words read conventionally at time one may be read unconventionally at time two and vice versa. Chafouleas et al. (2004) infer that such patterns demonstrate that reading is not the linear process that automaticity theory would lead one to believe. Therrien and

Hughes (2008) and Cohen (2011) believe that allowing students to repeatedly practice reading the same text teaches readers to be fluent in their reading. Although re-reading is an important process in acquiring reading proficiency, it is far more effective when students are given the opportunity to discuss the strategies used when re-reading. Learning and understanding is the result of the collaborative dialogue that occurs during this time, and a key element missing from the D5.

Work on Writing

According to Boushey and Moser (2006), the second component of the Daily Five is Work on Writing. Writing is an extremely important function for becoming capably literate (Luke, 2012). Graham and Hebert (2011) suggest reading and writing are reciprocal processes that directly benefit and impact each other. Because both reading and writing require active cognitive processes, what is learned with reading is also beneficial for writing (Graves, Juel, & Graves, 1998). Olson (2002) also speaks of the reader/writer relationship, noting that learners consistently utilize a large number of cognitive strategies when reading and writing. According to Olson (2002), these strategies include "planning and goal setting, tapping prior knowledge, asking questions and making predictions, constructing the gist (visualizing, making connections forming preliminary interpretations, identifying main ideas, organizing information, expanding schemata, and adopting an alignment), monitoring, revising meaning, reflecting and relating, and evaluating" (p. 413). Continuing this work, Olson and Land (2007) conducted a longitudinal study over an eight year period with approximately 55 teachers and over 2000 ELL high school students per year to consider the effect of these cognitive strategies on ELL students' literacy capabilities. For seven consecutive years, students who received cognitive strategy instruction significantly outpaced peers who did not receive explicit cognitive strategy instruction. Results reinforce the advantage of exposing students to ample writing opportunities which proceed instruction and rehearsal using an assortment of cognitive strategies. Yet, Iwai (2016) argues that focused metacognitive reflection and sufficient prospects for collaborative dialogue also are needed to drive a student's literacy learning.

Read to Someone

Studies show that reading aloud to a peer enables students to practice reading strategies, thereby improving a student's overall reading fluency, expression, and comprehension skills (Beers, 2003). Reading to a peer also gives students the chance to see reading strategies modeled and to coach their peers by helping them when they are struggling with a word or idea, thus further enhancing their own literacy skills (Kuhn & Levy, 2015). As early as the 1980s, researchers reported on the benefits of partner reading (Griffith & Rasinski, 2004; Hoffman, Afflerbach, Duffy, Hester, McCarthey, & Bauman, 2014). Galloway-Bell (2003) argues that providing children with the opportunity to select and read with a partner allows for a better understanding of the text as the partners discuss anomalies or novel ideas, unknown words, and overall understanding, especially when the partner is of similar reading ability. Same ability pairing also allows for students to practice reading strategies and to present ideas without risk of feeling inferior in ability or inadequate in reading knowledge (Freire & Macedo, 2013). Kuhn and Levy (2015) from their examination of primary students found that reading to a partner greatly enhances fluency, expression, critical dialogue, content knowledge, and collaboration. Finally, students can continue to advance at the same rate while feeling comfortable in this environment (Kuhn, 2016). Although the outcomes from Kuhn and Levy's (2015) research are supported by several recent studies (Allington, McCuiston, Billen, 2015; Gear, 2015; Kuhn, 2016), not one study considers the benefits of partner reading from a multiliteracies and multimodalities pedagogical standpoint. Would the same outcomes hold true if multiliteracies and multimodalities pedagogy were used?

Listen to Reading

Boushey and Moser (2006) present the fourth component of the D5 as Listen to Reading. Listening to reading improves listening comprehension, increases attention span, strengthens the reading-writing connection, and is an effective way to involve and motivate students in the literacy process. Also, listening to text while reading along affords students the opportunity to be fully immersed within the content of the story while forming mental images to accompany the words (Allen, 2003).

Diakidoy, Stylianou, and Karefillidou (2005) found a strong relationship between reading comprehension and listening skills when testing 612 students drawn from Grades 2, 4, 6, and 8. In this particular study, Diakidoy et al. were interested in investigating whether that relationship was affected by decoding skills, differed according to grade level, or was influenced by narrative or expository texts. There was a stronger correlation between reading comprehension and listening skills reported by Diakidoy et al (2005) for narrative texts than reading expository texts, a finding which was consistent across all grades tested. Finally, Diakidoy et al. recommend that reading instruction and listening comprehension strategies need to allow students to become acquainted with the organization, structure, and content of varying types of text. What is missing yet again is the multiliteracies component. For instance, audio-recordings (on recorders or online) provide an effective model for reading (Rasinski, Paige, Rains, Stewart, Julovich, Prenkert, & Nichols, 2017); however, these texts most often are narratives with some non-fiction listening opportunities at best. There is an absence of literature on students' fluency and comprehension strategies when listening to text.

Word Work

Boushey and Moser (2006) describe the final component of the D5 as Word Work, which includes vocabulary and spelling development. Providing students with the opportunity to practice spelling strategies and rules and work with familiar, authentic vocabulary that is meaningful and purposeful to each individual student helps them to build a rich literacy background (Bromley, 2007). Gentry's (2004) study of fourth graders using the pre-test/post-test format to assess spelling, shows that accurate spelling is important because it enables students to write more fluently, resulting in faster and increased thought production and processing. Spelling skill is not only a fundamental writing development skill but also a reading acquisition skill. Krashen (2006) examined the influence of explicit spelling and vocabulary strategy instruction on reading development. Results of this action research project revealed that the more a child reads, the better the child's spelling. Within Krashen's study, spelling and vocabulary words accessed during *Free Voluntary Reading* (FVR) (similar to Read to Self*)* were found to be just as effective as direct spelling instruction when creating personalized spelling and vocabulary lists based on

unknown words experienced in student reading. In addition to the benefits derived from authentic spelling situations are the benefits of expanding vocabulary knowledge.

Verhoeven and Van Leeuwen (2008) show that vocabulary development is best acquired in small increments (20 minute instructional sessions) through authentic and meaningful contexts. Vocabulary development is difficult to teach explicitly as it entails acquiring both the simple and multifaceted features of the word. Verhoeven and Van Leeuwen suggest allowing students the opportunity to self-discover spelling and vocabulary words within rich contexts (i.e., authentic learning situations such as creating a materials list for a science experiment), thus helping students learn and internalize the vocabulary. Providing students with an abundance of materials with which to manipulate and form words also helps students to solidify these important skills (Krashen, 1993), which gives verification and support to some aspects of the word work component of the D5. Yet, what this research lacks is attention to the opportunity for students to reflect on how these learned and acquired spelling and vocabulary strategies serve a purpose in their overall literacy development. Several recent studies (Baker, 2016; Hendrix & Griffin, 2017; Schiff, Sasson, Nuri, & Ben-Artzi, 2016) isolate metacognitive reflection as a key indicator of word spelling and vocabulary development in elementary students. These researchers concur that student metacognitive reflection on the spelling and vocabulary strategies they acquired through word study programs results in greater reading and writing proficiency and the transference of these strategies to authentic situations. Such elements need to be added to the D5 program in order to enhance student thinking, development, and competencies.

Presented in this section were the individual components of the D5 program with the research supporting the importance of various aspects of these components. When examining the individual components of the D5, there are several features in each that can contribute to student success; however, I argue that the D5 and other programs presented in Appendix C, lack the necessary components, elements, functions, and implications to meet the ever-changing landscape of modern society.

Although there are limitations to the D5 as a comprehensive literacy program, the major weakness is that it does not reinforce literacy as a social practice or promote contemporary literacy

initiatives. Instead, many of the components are completed in isolation and independently. According to Baynham (1995), when examining sociocultural approaches from a modern perspective, being literate is being part of evolving social practices. Literacy development is not a solitary act and should not be taught as such. Rather, it is shaped by lived experiences in social contexts.

Multiliteracies as Design Learning

Although the work of the NLG which focuses on literacy as a social practice paved the way for changing literacy pedagogies by addressing cultural, communicative, linguistic, and technological diversities allowing students to construct meaning in multiple ways, Cope and Kalantzis' (2009, 2015) theories of design and their *Learning by Design* model offer a method that focuses on both structure and agency to enable students to construct meaning in a globalized society. Second, the *Learning by Design* model promotes reflexive pedagogy through a series of "pedagogical moves" that can be differentiated based on student needs, resulting in learning as a consequence of exposure and experience. Finally, Cope and Kalantzis' (2000) multiliteracies work presents a metalanguage of design. This metalanguage is used to describe distinctions in meaning-form and meaning-function and how these relate to one another with regard to representation, communication, and expression, in turn representing a more relevant and useful educational design for the changing landscape of students' societal futures.

To begin, Cope and Kalantzis (2000) identify design as a method where both culture and the individual are indivisible. Accordingly, the representational resources accessible to a student are cultural (Kalantzis & Cope, 2006) and the means by which a student learns and makes meaning, which is used over the lifespan and is based on what the student already knows as well as on new social ways of creating meaning. In this sense, Cope and Kalantzis (2009) describe culture as the accumulated and continued expression of design where individuals continuously make and remake our own conditions of understanding in an ever-changing culture. They write about design:

> Design in the sense of construction is something you do in the process of representing meanings—to oneself in sense-making processes such as reading, listening or viewing, or to the world in communicative processes such as writing, speaking or making pictures.

According to Cope and Kalantzis (2009), a multiliteracies view of meaning making can be broken into three "designs of meaning": 1) *Available Designs,* that is what you have on hand to make meaning through culture or conventions; 2) *Designing*, working and making meanings; 3) *Redesign*, transformation of meaning whereby learning has taken place. Cope and Kalantzis (2009) consider 'designing' as "the act of doing something with Available Designs of meaning, be that communicating to others (such as writing, speaking, making pictures), representing the world to oneself or others' representations of it (such as reading, listening or viewing) " (p. 177). Designing links multimodal expressions of meaning making through past and new experiences. The design symbolizes a remaking of a new way of creating meaning through a transformational process. 'Redesign' in this sense is the product 'Designing'. Learning comes from the circulation of the design process where individuals are consistently designing, creating meaning, transforming the original design to create a new design, thus creating new meaning as a result of changes to social environments, interactions, learning from others and differing interpretations of other's designs. One person's design resource becomes another person's redesign through interpretation and transformation (Westby, 2010).

Two key elements of this change or transformation include voice and hybridity (Cope & Kalantzis, 2000). The element of voice involves metalanguage of linguistic communication design in multiliteracies that enables users to take the resources available at the time and express meaning. New designs are new expressions of one's voice. Hybridity describes the many layers of identity, experiences, and discourses that represent the available designs of meaning within a multiliteracies environment. All utterances of texts are reconstructions of an individual's perspective on, and understanding of the text. A multiliteracies design pedagogy is largely impacted by the elements of voice and hybridity as a means of transforming and constructing meaning through Design and Redesign. Learning is ongoing and results in immediate consequences for its designers (Cope & Kalantzis, 2000).

Researchers (e.g., Bingham & Hall-Kenyon, 2013; Flewitt, 2013) argue that literacy educators must be able to differentiate their teaching by navigating through an abundance of information in creative and critical ways, signifying their knowledge in multiple ways, and supporting literate learning through

extensive opportunities to express meaning with varying systems of linguistic, technological, gestural, textual, graphic, auditory, and representative languages (Ajayi & Collins-Parks, 2016). Literacy pedagogy needs to hone in on the changing face of literacy, and design and transform itself for students to experience a full range of possibilities for expressing meaning. Cope and Kalantzis' (2015) *Learning by Design* model provides a description of pedagogical moves for educators that address these.

From Design Learning to Pedagogical Moves

As first introduced in Chapter 1, Cope and Kalantzis (2009, 2015) propose a set of pedagogical moves (see Figure 1) which are: Experiencing, Conceptualizing, Analyzing, and Applying. These moves arose out of the original *Learning by Design* model first introduced by Cope and Kalantzis in 2009 and revised as a result of the *Learning by Design* project to explain how the design process is translated into best-practice multiliteracies pedagogy. The pedagogical moves do not need to be executed in any particular sequence as these practices are all functions of a greater whole. However, when all of the moves are employed, critical and creative thinking skills and problem-solving skills are developed in learners in a more engaging and constructive way so that students become the navigators of their own learning journey and meaning-making process.

Figure 1. Repertoire of Pedagogical Moves Within a Multiliteracies Approach—Used with Permission (Cope & Kalantzis, 2015)

Experiencing. For Cope and Kalantzis (2000), Experiencing involves the "immersion in meaningful practices within a community of learners who are capable of playing multiple and different roles based on their backgrounds and experiences" (p. 17). Students need to be motivated to learn and this learning needs to be seen as purposeful and meaningful in order for mastery to occur through assimilation and accommodation (Vygotsky, 1986). Immersion is an approach to teaching and learning that draws on a learner's lived experiences into school learning to create meaning (Cazden, 2006), but immersion alone is not enough. Other pedagogical moves may be needed, one of which is Conceptualizing.

Conceptualizing. According to Cope and Kalantzis (2015), Conceptualizing involves two main components: Conceptualizing by Naming and Conceptualizing with Theory. Both involve the assemblage of categorized terms into mental models that illustrate academic fields. Conceptualizing allows the learner to gain explicit instructions at the time that they need it or require it the most while becoming active concept-creators. This element can be developmental and situated to the learning style of the student, which in turn allows for a deeper understanding of the world. Conceptualizing by Naming means that the student learns to use "abstract, generalizing terms" (Cope & Kalantzis, 2015, p. 19), transferring back and forth between the "particular to the abstract" (Cope & Kalantzis, 2015, p.20) in order to draw conclusions and make distinctions between like and unlike concepts. The second element of Conceptualizing is in relation to theory in that the concept names created through the first component are now represented as "schema or a conceptual model" (Cope & Kalantzis, 2015, p. 20) for purposes of theorizing the concept. In this way, students become active agents of conceptual formation. As with Experiencing, Conceptualizing with Theory involves "weaving between the experiential and the conceptual" (Cope & Kalantzis, 2015, p. 20). In relation to multiliteracies, metalanguages need to be introduced to allow for the interpretation and description of the design elements for varying meaning, modes, which lead to Analyzing, the third element in this multiliteracies framework.

Analyzing. Analyzing requires students to interpret and reason through the social and cultural context of particular designs of meaning (Cope & Kalantzis, 2015). Moreover, Analyzing is the knowledge process involving the examination of "cause and effect, structure and function, elements and

their relationships" (Cope & Kalantzis, 2015, p. 18). Analyzing takes two forms: Analyzing Functionally and Analyzing Critically. Analyzing Functionally is a knowledge process that investigates the function of an instance of "knowledge, action, object, or represented meaning" (p. 18). Reasoning patterns are developed and are woven between direct personal experience and indirect virtual experiences. Analyzing critically, scrutinizes the intentions and interests of humans based on claims and arguments and supported by evidence. This subjective analysis differs from Analyzing Functionality, which is objective in that the purpose is to critically examine other people's motives, intentions, and interests.

Cope and Kalantzis (2015) suggest that the goal of analyzing is to help students improve and expand on their mastery of a concept or skill through repeated practice (Experiencing) by means of metacognitive reflection and concept understanding achieved from Conceptualizing, which requires argumentation and explanation to understand and reason (Analyzing). Analyzing also allows learning to take place amidst political, ideological, and cultural systems as they relate to knowledge and social practices. This move involves students reflecting on what they are studying and examining it from a critical lens in relation to its context. In other words, the teacher's role is to have students question the mastery that they have started to acquire and examine it from varying angles and under varying circumstances. The last area of Analyzing involves the analysis of the functionality of knowledge. This involves developing "functional relationships between cause and effect" (p. 20), deducing, reasoning, and inferring all based on informed decisions about the knowledge acquired by the learner (Cope & Kalantzis, 2015), which leads to the final of the moves, Applying.

Applying. Once students have mastered the art of questioning and constructively critiquing their own learning by means of creatively extending and applying new learnings within old and new communities, students will then transfer their meaning into practice (Applying). This element in the repertoire of pedagogical moves recognizes that it is not enough to articulate our understandings of "inter-systematic relations or to critique extra-systematic relations" (The New London Group, 1996, p. 88); learners apply their "experiential, conceptual, or critical knowledge" (Cope & Kalantzis, 2015, p. 20) to actively interfere with their changing environment to transfer what is learned in an educational setting to

the lived world. Applying occurs in two ways: Applying Appropriately and Applying Creatively. While Applying Appropriately is a learner's way of acting on reliable, predictable knowledge where precise reproduction results in a small form of transformation or reinvention of knowledge, Applying Creatively requires learners to creatively adapt knowledge and learning from one context to an authentic setting or learning context unfamiliar to the learner. In this sense, it incorporates the learner's interests and affinities to restructure and redefine what is possible, in turn the world and the experience in a new way. Learners should be able to show and implement their understanding of new and old phenomenon in new and innovative ways and in varying situations. Weaving in this particular pedagogical move occurs in Applying appropriately between a world of experience and one which they have transferred their learning and understanding through the knowledge processes.

These components of multiliteracies (Experiencing, Conceptualizing, Analyzing, and Applying) proposed by Cope and Kalantzis (2015) in combination with the components of multimodalities (technical components and ethos) serve to help educators critically inform our students in this multimedia era.

Multimodalities as a Component of Multiliteracies

Individuals have accessible to them a multifaceted breadth of representational resources based on the many cultures of their lived experiences and their multilayered identities. Flewitt (2013) explains that due to progressively complex digital and technological societal advances, both digital media and print construct childhood literacy learning. In order to effectively interpret digital media, students need to use multiple approaches and a combination of modes, including verbal and written language, visual representations, icons, sounds, simulations, animations, and the consideration of the specific visual layout of the page (both print and digital) in order to construct such meaning. The modality by which individuals communicate is a "fusion of meaning and form" (Jewitt & Kress, 2003, p. 10) that considers the situation and the views and opinions of the communicator regarding what is relevant. Multimodalities theorists Knobel and Lankshear (2015) identify multimodalities as having two components: a technical component and an ethos (meaning a new way of belonging to the world). They argue that too often educators worry

about the technical component, when what is really important is the ethos component, as it allows children to try on new ways of doing things and to create new identities and new ways of positioning themselves in the world. Similarly, in literacy, rather than worry about whether the literacy is a new or old literacy, what is important is that literacy allows students to explore a new ethos and to orient themselves in the world differently as a result.

A study investigating 10-year-old literacy students' multimodal communication in a mathematics classroom, with a specific emphasis on gesture and speech, sought to understand the "complementarity and richness of different modalities in the construction and expression of mathematical thinking" (Ferrara, Robutti, & Edwards, 2014, p. 106). Using a pedometer as a technological artifact to measure distance, students' multiple modalities were demonstrated to be at work through mathematical thinking. Surprisingly, gestures became the most critical indicator of mathematical attainment in that the body, hands, and face all became "crucial channels through which information about the world is sensed, processed, and conceived" (p. 125). Furthermore, Ferrara et al. (2014) went on to suggest, speech is in fact a gesture received auditorily rather than visually.

A Critique of Multiliteracies Pedagogy

Theorists who study multiliteracies typically describe the representational resources available to students as transformative in nature, and as giving students the ability to construct meaning through malleable grammar (Cope & Kalantzis, 2015; Kress, 2009; The New London Group, 1996). However, Leander and Boldt (2012) argue that while multiliteracies pedagogy seemingly addresses the narrative of a structured conceptual system, multiliteracies literature does not take into account fluctuating time and space and how these elements impact the learner. Leader and Boldt (2012) dispute that text-centricity or discourse-centric perspectives ignore the naturally occurring body movements and sensation or feelings a student has when involved in literacy-related activities. In a study involving a ten-year-old boy who was observed for an entire day as he read and participated in literacy-related activities based on a Japanese

Manga text,[9] Leander and Boldt (2012) discovered that his literacy-activity was flooded with affect, bodily movement, and emotion which contradicts multiliteracies' "rational control of meanings and forms" (p. 39). This is a non-representational approach which Leander and Boldt (2012) describe as a "central being" (p. 22), not having any start or end point but rather being involved in ongoing, consistently changing, presenting, and forming "relations and connections across signs, objects, and bodies in often unexpected ways" (p. 22), Leander and Boldt's (2012) research raises the question of how multiliteracies pedagogies should be viewed? Is it sufficient to approach multiliteracies from the stance where students solely create meaning based on representational resources "patterned in familiar, yet recognizable ways" (Cope & Kalantzis, 2009, p. 10) or are non-representational resources equally important to consider when identifying available design? When a student reads a text and connects to it on an organic level, they feel what the character feels and can embody the meaning of the text and react to its content 'in the moment' as an overt physical reaction (throwing their hands up in the air or tearing up due to a sad circumstance in the text). Multiliteracies pedagogy needs to be open to both representational and non-representational resources focusing on future literacy goals and moment-by-moment immersion in literacy activities. The question is, how can this understanding of multiliteracies be effectively utilized in a somewhat constrained classroom setting? And how can new technologies be privileged in the context of multiliteracies to act not just as a function, but also as a means of design through these changing times? The inclusion of digital literacies as a key component of multiliteracies offers some possibilities.

The 'Literacies' of Digital Literacy

Digital literacy can be regarded as a subsection of a larger literacy framework, and is established theoretically within the socio-cultural perspectives of literacy (Burnett, 2010; Eshet-Alkalai, 2004; Knobel & Lankshear, 2015; Merchant, 2007). As Gee (2002) describes, literacy has been part of a changing social context and ongoing discourse. By definition, digital literacy is the knowledge, competencies, and actions utilized in a large number of digital devices, including smart phones, laptops

[9] Japanese Manga are comics created in Japan (which have been translated in this case to English) containing many stories in an episode by episode layout.

and PC/Mac computers, and tablets, identified as a functional network as opposed to a computing device (Knobel & Lankshear, 2015; Ng, 2012). The multiplicity of digital literacies occurs within environments using digital technologies and involves diverse social, discursive, and textual practices present in these communities. Three aspects of digital literacies are creating and sharing information, working with this information, and using these multimodal features responsibly (Fraillon, Schulz, & Ainley, 2013). Ultimately, students still require teacher assistance, direction, and scaffolding for digital literacies used for learning and acquiring information despite the fact that they can independently use information and communication technologies knowledgeably and proficiently for social networking (Luckin, Clark, Graber, Logan, Mee, & Oliver, 2009).

With the changing landscape of online materials, resources, and demands come the possibilities of "new social and material conditions on communication and education" (Jewitt, 2009, p. 243). Jewitt (2009) continues to explain that these new conditions on communication allow for fresh representations, including the potentials and limitations presented by the changing landscape. By understanding digital literacies and how they play into multiliteracies and multimodalities pedagogy, educators can better plan and execute these models of learning in their classrooms.

Recommendations for Digital Literacies Pedagogy

UNESCO's Institute for Information Technologies in Education (UNESCO- IITE, 2011) distinguished five key assumptions about the structure of digital literacies work. The first assumption is that digital literacy and multimodalities profoundly alter the way we learn and function in society. The IITE panel suggests that through the creative use of technology and technological tools, the qualities and well-being of people's lives can be greatly improved. Using technological tools to track health for instance can be an effective use of a device that would impact a person's wellness. Second, it is a well-known assumption that Information and Communications Technology (ICT) will continue to evolve rapidly. Third, there should be no limitation on accessibility to technology as a result of economic, gender, cultural, linguistic, geographical/physical barriers. The fourth assumption is that there is a large global responsibility, most notably by policy makers, to establish the important aspects of digital

knowledge and understanding of digital tools and to identify ways to equitably and cross-culturally inform society about technology and its components in this digital age. Finally, a universal definition of digital literacy is needed that reflects a more comprehensive understanding of its critical components that through education and training will encourage a transformation in knowledge, competencies, and skills for future success of the students.

The UNESCO-IITE (2011) panel explains that benefits will accrue to individuals who acquire 21st century competencies and skills including critical and creative thinking, communicative and collaborative skills and digital knowledge (the effective use of digital devices for purposes of collaboration, advocacy, communication, and expression). Although the province of Ontario's Ministry of Education is beginning to update the curriculum to include digital literacy and multiliteracies to keep up with accelerating technology advancements (Ontario Ministry of Education, 2014a), there is a large divide among educators in terms of the implementation of digital literacies, multiliteracies, and technological literacies in their programming (People for Education, 2014). Educators lack the guidance on how to effectively implement multiliteracies, digital literacies, and technological literacies in the classroom. Much of this goes back the limited empirical evidence on the topic. The use of iPads in schools has been investigated by some researchers but even here the research is somewhat limited.

Research on the Use of iPads and Integrated Apps in Multiliteracies Programs

Several studies have observed the use of the iPad and apps in the literacy classroom (Hutchison, & Beschorner, 2015; McClanahan, Williams, Kennedy, Tate, 2012; Northrop & Killeen, 2013) and suggest the digital tool "seems" to make a difference in academic outcomes. Yet, no definitive results to date demonstrate that the use of the iPad significantly improves students' reading comprehension, reading acquisition, and reading development. However, there are several descriptive studies of iPad use in classrooms.

Lynch (2014) used ethnographic fieldwork to examine the use of the iPad to support literacy learning in preparatory or Kindergarten classrooms in Victoria, Australia. Lynch (2014) chose to analyze the outcomes of early childhood literacy learning using digital technology as a teaching tool. Teachers in the

school were pressed to change current teaching practices from paper and pencil tasks to emphasize digital learning. E-book interactions and gamified literacy apps became part of their literacy block rotation. Findings based on observations and interviews showed the greatest disparity existed between print-based traditions and required expectations and new digital literacies. Students who participated in iPad literacy activities were not only observably more engaged in the literacy task than those students who were working on paper and pencil literacy tasks, but also produced greater literacy gains (phonological awareness and letter forms and sounds) than their non-iPad counterparts, indicating the use of the iPad in literacy programs was beneficial.

The impact of the iPad on transference of learning and collaboration. Simpson, Walsh, and Rowsell (2013) found hierarchical roles within the classroom diminished and all students became leaders of their own and other's learning as a result of iPad inclusion in representational and non-representational multiliteracies activities. Students collaborated and accepted the ideas and strategies of others willingly, and critical framing allowed students to think about what they were learning. In turn, they were able to communicate what, how, and why they learned and what they did as well as developing strategies to transfer to other areas as a result of iPad use. Networks and participation structures, hybrid text access, and interdisciplinary crossover of knowledge were also noted as key findings in this study. Students were reported as actively listening to each other and were dynamically interacting in a collaborative way. In this respect, the iPad was encouraging a natural sharing of metacognitive knowledge that was unexpected. Additionally, students navigated various hybrid text forms while on the iPads and moved from local to national and international contexts. Students progressed out of their immediate community to experience the greater world when using these digital devices. Ultimately, Simpson et al. concluded that there was a paradigm shift in the students' emergence as technologically knowledgeable and resourceful. What is still needed is an understanding of *how* the iPad as a tool advances literacy development and *why* tools such as the iPad do or do not engage students in transformative learning.

Effects of iPad use on motivation and engagement. A common provisional finding in the literature about the use of the iPad as a teaching tool is increased motivation and student engagement with literacy

and learning tasks (Hutchison, Beschorner, Schmidt-Crawford, 2012). Several studies examine motivation and engagement as an outcome of the use of the iPad, reporting that it "appears" as though the iPad further engages students with its integrated apps and its user-friendly interface (Calkins & Bowles-Terry, 2013; Clark & Luckin, 2013; Diemer, Fernandez, & Streepey, 2012). For instance, using Prince's (2004) active learning and collaborative learning theory, Diemer, et al. (2012) sought to investigate student perception in learning and engagement based on their experiences with iPads and to identify the factors that influence student attitudes towards the use of iPads in the classroom. Perceptions of engagement and learning were examined among 209 undergraduate students using the iPads from Indiana and Purdue University in several different degree programs. Using a 10-question, 5-point Likert scale survey, students were asked to rate their perceptions of learning and engagement upon the completion of their iPad session(s). Learners who claimed to experience high levels of engagement while using the iPad also reported having a high level of learning. Likewise, participants who perceived themselves as having greater levels of learning and engagement, described themselves as being confident and comfortable with modes of e-learning and said they were more likely to use iPads in the future for learning and professional development. Age, gender, and language were not significant in terms of student attitude. Diemer et al. (2012) concluded by affirming that the iPad as a digital device is perceived to be an effective tool in supporting and encouraging collaborative learning and active engagement in the classroom. Further, the more experience and exposure students report they have with instructional technology, the greater their reported self-efficacy and flexibility in accepting new technological functions and applications.

Similarly, Calkins and Bowles-Terry (2013) investigated the value of integrating the iPad into library instruction for first-year composition students. Students were given the choice to use the iPad or not and then had to complete a concept mapping activity. The authors hypothesized that because concept mapping enables critical thinking and the making of meaningful connections, students' engagement would be ignited when coupled with technology and they would produce high-quality concept maps. Findings suggest the contrary. No significant differences surfaced in time spent on concept mapping or student likeliness to share their work. Even though students who worked with iPads responded more

positively to open-ended questions about satisfaction levels, this satisfaction did not translate into better quality work. In fact, students who used the iPad to create their concept maps did significantly poorer than those students who did not use the iPad. Unfamiliarity with the device may have acted as a barrier to the brainstorming process and, slowed students down and students may not have understood the purpose of using the tablet in class. Calkins and Bowles-Terry (2013) argue that the iPad is simply a teaching tool that will not ignite learning and engagement on its own.

Distraction and inconsistent app experiences are noted drawbacks to iPad use (Javorsky & Trainin, 2014; Stewart, 2012). Stewart's (2012) study involving primary students, indicate that iPads' many digital features were distracting to student learning. Javorsky and Trainin (2014) reported inconsistencies between digital stories from one app to another based on the analysis of primary students' use of the iPad to access e-books. When using different storytelling apps, students become confused with the multimodal features of the iPad. However, Javorsky and Trainin also indicate that the greater the student's experience with the iPad, the lower the levels of frustration. These researchers concluded that in order for students to transfer their learning from one app to the other, more time is needed on digital stories so that students are less confused and frustrated.

With such variation in findings with regard to the effectiveness of technology implementation into classrooms and overall satisfaction with student engagement and motivation and skill development, more research is essential. Given that most studies on engagement and motivation as a result of iPad integration focus on college students, undergraduate students and pre-service teachers there is a great need for research using elementary students as participants.

Ultimately, some results indicate that a network of qualifying influences support student growth and technology-related effects for elementary students (Bennett, 2012; Northrop & Killeen, 2013; Rowsell, Saudelli, Scott, & Bishop, 2013), but the literature on iPad use is contradictory, creating the need for further research.

To overcome some of the gaps in literature, I created and tested my own balanced multiliteracies program. I began with a Pilot Study (see Chapter 3) and refined that study into the one which is the focus of this dissertation (Chapters, 5, 6 and 7).

CHAPTER 3

PILOT STUDY

For the Pilot Study I brought together elements from The New London Group's (1996) Multiliteracies pedagogy and Cope and Kalantzis' (2015) *Learning by Design* model. I also retained components from the D5 involving decoding and comprehension literacy strategy instruction through Guided Reading as well as elements from Work on Writing and Word Work. Coupled with these elements are components created based on my interpretation of the shortcomings of other literacy programs.

The Pilot Study is included in this dissertation because it formed the basis for much of the larger study upon which this dissertation is based. Specifically, the methodology and design from the Pilot Study was replicated with the exception of minor changes which will be discussed in the chapters to come. This chapter begins with an introduction to the first of two literacy programs: the Critically Reflective Literacy Program (CRLP) and the Integrated iPad Literacy Program (IiLP). The IiLP includes all of the components of CRLP except that the iPad is included. The setting, curriculum design, and data analysis procedures for the Pilot Study (which were the same as those used for the Full Study) are also described.

Pilot Study Curriculum Based on Learning by Design

The Pilot Study compared two literacy programs that were equivalent in foundational structure with the exception of the inclusion of technology in the IiLP. By giving a detailed description of both programs, I clarify their purpose in both the Pilot Study and the Full Study.

The CRLP is a comprehensive program designed to create a dynamic literacy environment in which students collaborate and solve problems. As a result of the research supporting goal setting, reflective analysis, collaborative opportunities, critical literacies, and social justice opportunities, each of these elements is included in every aspect of the CRLP. The CRLP is comprised of six components: Guided Reading, Read and Reflect, Work on Writing, Listen and Strategize, Reflective Partner Reading, and Word Work. For a complete synopsis and overview of the CRLP, refer to Appendix A.

Guided reading/writing. This component involves participating in guided reading and writing practice scaffolded by the teacher at least once a sessional rotation or once a week. With guided reading, students receive explicit reading strategy instruction, have expert reading/writing behaviours modeled, receive exposure to difficult critical content, and are given the opportunity to collaboratively discuss the critical content presented. Providing an effective Guided Reading/Writing structure in the CRLP means ensuring instruction is differentiated. Reading strategies are taught in such a way as to focus on breadth of understanding and depth of strategies (Burkins & Croft, 2010).

Only the most essential decoding (Figure 2) and comprehension (Figure 3) reading strategies (Dole, Duffy, Roehler, & Pearson, 1991; McNamara, 2012; Pressley & Allington, 2015; Torgesen, 2000), termed "bookmark strategies" (Hudson, 2007), were chosen as the focus of Guided Reading/Writing sessions in the CRLP.

Figure 2. Decoding Bookmark Reading Strategies

Figure 3. Comprehension Bookmark Reading Strategies

The reading strategies bookmarks (Figures 2 and 3) are introduced at Guided Reading and remain with students but are used and reviewed at every literacy component to ensure these reading strategies are being utilized, understood, and internalized. Although the teacher focuses on the appropriate use of a

reading strategy based on student needs, it is through social justice and critical literacies pedagogy in the form of articles, stories, images, and discussion items that students are exposed to key curriculum content and are taught to think critically (Appendix A).

Read and reflect. This component harnesses key teachings and learnings from the Guided Reading/Writing component to extend student literacy development using reflexive pedagogy (Cope & Kalantzis, 2015). This literacy component was created because of the importance for students to reflect on the reading strategies that best suit their purpose and their effectiveness and skill.

With the understanding that metacognitive reflection improves students' reading efficiency, fluency, and comprehension abilities (Cooper, Robinson, Slansky, & Kiger, 2014; Pressley & Allington, 2015), the Read and Reflect component was designed to allow students the opportunity to read a self-selected or assigned leveled text independently using reading strategies that were explicitly taught and reinforced during the Guided Reading session and reflected upon. Reflection occurred after the student completed the text, through the use of a series of co-constructed guiding questions. Students reflected on the bookmark reading strategy(ies) they used and found most helpful during the reading session, the decoding and/or comprehension strategy they might continue to implement, or how they might change a particular strategy to use it more efficiently or effectively in the future. Finally, during Read and Reflect, students plan their next steps as a reader (for a complete list of reflection questions, refer to Appendix A). Students collaboratively shared these post-reading reflections with a peer after recording them in their reading reflection journal. The reading reflective journals provided students with the chance to review their reading in an attempt to guide the students into creating meaningful and authentic literacy goals.

Work on writing. This component was designed with the view of students as professional authors and peer coaches who work on more than just writing to perfect their craft of thinking through the written text. The Work on Writing component emphasizes the act of writing through a collaborative community of writers to ignite passion in writing and extend thinking skills to include open-mindedness, critical-mindedness, and innovative problem-solving skills. Using real-life, authentic topics such as bullying, inequalities around the world, bias/racism/prejudice in the media, and digital citizenship,

students tackled issues of importance and negotiated solutions that would potentially solve or begin to solve such issues. Another important element of the Work on Writing was choice in their writing. During the Guided Reading/Writing component, students were exposed to many different text forms. Students were given the choice of the text form and topic they wished to use/write about to articulate their ideas about a topic or critical issue.

Listen and strategize. This component was designed to allow students to listen to expert readers model fluent and expressive reading. In addition, students were given literacy tasks requiring them to critically examine the text they heard with the focus on main idea, key themes, and reading strategies used. After listening to the text, typically an extension of a text used at the Guided Reading/Writing session, students were involved in 'critical thinking activities' to encourage the transference or application (Cope & Kalantzis, 2015) of reading and listening strategies and thinking and application strategies (Appendix A). The final aspect of this component gave students the chance to become fluent and expressive readers by using such reading strategies as identifying, naming or conceptualizing (Cope and Kalantzis, 2015) and by reflecting on reading strategies that were being used to become expert readers.

Reflective partner reading. This component Required students to collaborate with same-ability reading partners. Students collaboratively read a leveled text with a partner and were expected to generate and share critical and engaging questions throughout the reading session. During this component, levelled partners reflected not only on the reading strategies that they were using as readers, but also on the reading strategies they heard their partner use. Finally, the partnership within this component helped students to metacognitively reflect on their reading and critical thinking with their partner and co-design next steps for their reading by identifying ways to further engage in critical questioning. This collaborative reading session afforded students the time to reflect on reading strategies and alternative perspectives and reading behaviours other than their own, potentially resulting in improved literacy performance.

Word work. This component involves students working on spelling, vocabulary, and grammar in authentic contextualized forums. Students' progress at different rates with regard to understanding

spelling rules and tactics. Within the CRLP, word work is approached so that the relationship between writing, spelling, and reading is made clear (Bear, Invernizzi, Templeton, & Johnston, 2004). Therefore, spelling in this component is interconnected through student writing and reading within all content areas. Students extracted words from their own work in order for spelling rules and functions to be learned and practiced within an authentic and meaningful context (Head-Taylor, 1998). The only time words were chosen by the teacher was to introduce students to new vocabulary (i.e., vocabulary related to the Rights of a Child, racism, LGBTQ+). Therefore, many of the students' spelling and vocabulary words for this component in the Pilot Study were derived from the literacy components.

The purpose of the Word Work component is for students to have choice in their spelling and vocabulary word extraction and for the students to practice these words within the context of reading and writing. The Word Work component was directly linked to the Work on Writing component in which, following self- and peer-editing, students continued to practice the misspelled words to enhance their writing. Similar practice occurred for the Read and Reflect and Reflective Partner Reading component. When a student encountered an unknown word, the student added that word to their spelling and vocabulary list to use and practice during Word Work. At the conclusion of the Word Work session, students reflected on the spelling strategy used to negotiate the spelling of the unknown word and in turn created a personalized spelling and vocabulary strategy bank. Further, each student had the opportunity to practice, narrate, visually demonstrate, or dramatize their spelling and vocabulary words as they saw fit. The goal for this component was to enhance the creative process and have students create critical and creative strategies to develop strategic spelling tactics to become better spellers and develop insights into extending and learning new vocabulary.

Additional Curricular Components

Several additional strategies were part of the CLRP. These were: goal setting, metacognitive reflection, opportunities for collaborative dialogue, and critical literacy pedagogy. I will discuss each of these and provide a rationale for their inclusion in the curriculum.

Goal setting and metacognitive reflection. A child's perception of their abilities and beliefs as a literate learner weighs heavily on their motivation and engagement, their ability to learn, and their achievement outcomes. A student's self-efficacy influences the types of literacy tasks they choose to pursue, the effort and persistence they put into these tasks, and their achievement levels (Schunk, 2003). Paramount to students developing self-efficacy is goal setting. At the inception of the CRLP, learners created general and specific literacy goals and then planned for achieving them.

At the end of each literacy block, the students received time to metacognitively reflect on their literacy session, analyze which thinking and reading strategies were used, and whether or not they successfully achieved their goals. Students were encouraged to record their reflections on their goal setting sheet (Appendix A) and compare these with the goals they set in previous sessions. Furthermore, the students were advised to create next steps for the following literacy session, indicating how they could improve or continue to demonstrate successful literacy thinking. From the commencement of the Pilot Study, metacognitive reflection and goal setting were modeled, scaffolded, and reinforced at every literacy session until all students developed an automaticity with this element and were effectively reflecting at each session.

Collaborative dialogue. Using the "Norms of Collaboration" (Garmston & Wellman, 2009) that were widely adopted in the school in which the Pilot Study took place, students were taught to collaborate with one another using varied means (i.e., pausing, paraphrasing, posing questions, putting ideas on the table, paying attention to self and others, and assuming positive intentions). Additionally, students were taught to explain, give examples, question, and make connections within their reading and writing in order to communicate these understandings and queries with a partner or small group. By the time collaborative dialogue was introduced as an element to the CRLP, students already had extensive experience working with a partner or a small group, sharing ideas, listening to the ideas and opinions of others, and offering effective, constructive feedback to group members for reflective and revision purposes.

A supplementary aspect of the collaborative discussion element was an "on-task student talk" initiative that was created. During all of the literacy components, students were encouraged to sit with a self-selected partner from their leveled literacy group and discuss any misconceptions or misunderstandings from the text, seek help with writing tasks, share ideas, and offer opinions. Also, partners were free to discuss ideas or seek assistance as they saw fit. After modeling and scaffolding different ways to discuss reading and writing ideas and strategies with a partner, collaborative dialogue was fully incorporated into the CRLP.

Critical literacies pedagogy. In past years, I included social justice topics in my program as a unit of study but never had I taken a critical literacy approach to my entire pedagogy. Throughout the CRLP, the students were introduced to ideas of power, oppression, marginalization, societal inequities, stereotypes, bias, intolerance versus acceptance, and issues based on the "isms"—sexism, racism, ageism, ableism. During whole class lessons and during the Guided Reading/Writing component, I would have students engage in the mentioned issues through inquiry and reflection. Differentiated texts, including books, articles, and visual images, were available for students to select during any of the literacy components. Vocabulary words for Word Work incorporated terminology students would encounter with learning about these issues and student writing tasks were framed around critical literacies when modeled by the teacher within a Guided Reading/Writing session. In fact, every facet of the CRLP included critical literacies, opportunities for collaborative dialogue, and metacognitive reflections.

In summary, the CRLP included the six key components of a well-balanced literacy program (Pressley & Allington, 2014) and the elements (goal setting, metacognitive reflection, collaborative discussion, and critical literacies pedagogy) that were missing from more popular literacy programs (i.e., the Daily Five). Nevertheless, this program was still lacking access to technology and a complete multiliteracies/modalities framework. Further, the CRLP alone would not help to answer the question: *Does the use of technology as a learning and teaching tool in a well-balanced literacy program have an impact on student literacy skill development and attainment*? For these reason, the IiLP was created and the Pilot Study evolved to compare both the CRLP and the IiLP.

Integrated iPad Literacy Program (IiLP)

Although the CRLP improved upon the D5, a major aspect of multiliteracies/multimodalities pedagogy was missing; technology. The IiLP was designed to address this shortcoming by re-bundling the elements from the CRLP and using the iPad as a medium to support multiliteracies. The five components of the IiLP are: Read, Record, Reflect; Writing Workshop; Word Work; Strategy Identifier; and Guided Reading/Writing. Figure 4 provides a representation as to where the CRLP components were infused within the IiLP components, while Table 1 shows the fusion of the CRLP components into each of the IiLP components.

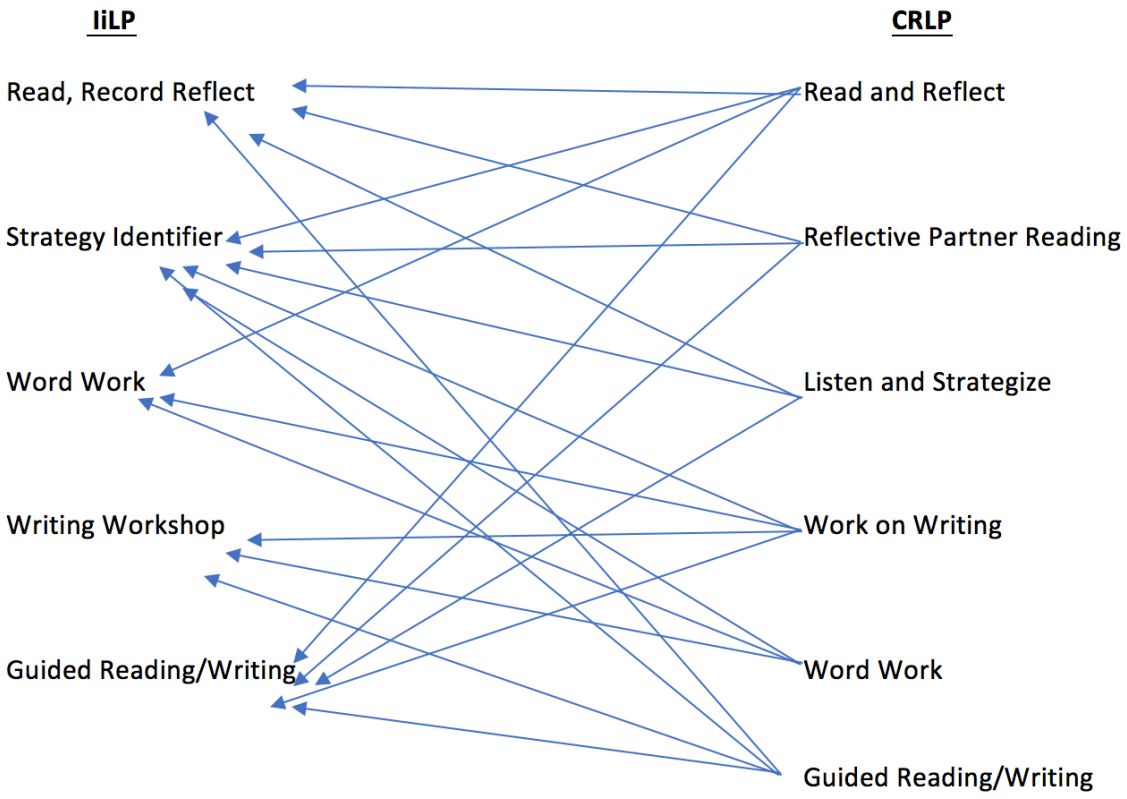

Figure 4. CRLP vs. IiLP Component Comparison Chart

Table 1

Intersection of CLRP Components into the IiLP Components

CRLP Components Fused into the IiLP Components	Read, Record, Reflect	Strategy Identifier	Word Work	Writing Workshop	Guided Reading and Writing
	• Read and Reflect • Reflective Partner Reading • Listen and Strategize • Guided Reading/Writing	• Read and Reflect • Reflective Partner Reading • Listen and Strategize • Work on Writing • Word Work • Guided Reading	• Read and Reflect • Work on Writing • Word Work	• Work on Writing • Word Work • Guided Reading/Writing	• Read and Reflect • Reflective Partner Reading • Listen and Strategize • Work on Writing • Word Work • Guided Reading

One consistent element across the CRLP and the IiLP was goal setting and the opportunity for students to metacognitively reflect on their learning at the end of each session. A description of each IiLP component is presented below and in detail in Appendix B.

Read, record, reflect. Students were assigned to a leveled/same-ability group with whom they rotated through the IiLP components. Before we began the Pilot Study, my class and I co-constructed criteria to identify what made an effective fluent and expressive reader. These criteria were used for assessment and reflective purposes at the Read, Record, Reflect component (Appendix B). Students first chose a leveled text pertaining to the critical literacy pedagogy and social justice theme for the week and then independently read the text while focusing on their fluency, expression, automaticity, and comprehension, all the while using their bookmark reading strategies (continued from the CRLP). When the student reached a level of comfort and self-efficacy with their independent reading, they would ask a partner from their same-ability grouping to listen to them read. If, after listening to them read, their partner felt the student met the co-constructed criteria for fluency and expression, the student would enter the Record phase of this component. Students then had their partner record their reading on the iPad using the video function of the camera. The partners then examined the video footage with the purpose of assessing fluency and expression. Partners collaboratively discussed the student's reading ability while

considering strategies used, strengths, needs, and next steps, and then completed the "Read, Record, Reflect" criteria Google Form, highlighting the next steps for that student (Appendix B). This procedure repeated with the alternate partner reading, recording, and reflecting. The session concluded with partners demonstrating their comprehension of each other's text using a presentation app such as Explain Everything, iBrainstorm,[10] or Educreations to portray the main idea of the text. The metacognitive reflection phase was the final element of this component and was completed in the form of a Vlog. The Vlog was key because of the benefit it had for student goal setting and literacy advancement.

Metacognitive reflective vlog. Students in the IiLP were encouraged to metacognitively reflect on their literacy sessions after each component because of its associated benefits with goal setting. Reflection using the Vlog as a technologically enhanced pedagogical technique necessitated that students learn digital literacy skills through video blogging and uploading their Vlogs to the internet. Through their Vlog, students reflected on what they learned based on focused and leading questions co-constructed with the teacher (Appendix B). The vlog allowed students a chance to create, communicate, and share with global audiences, and collaborate with students studying the same topic or in the same grade from around the world (Taylor, 2013).

After Vlogging, students reviewed the footage as a reminder of their learning for that day before dating, naming, and posting their Vlog to a private class YouTube channel. Every two weeks, students reviewed their Vlogs and chose two or three to save on the channel, while deleting the rest. The decision to keep a Vlog was based on co-constructed criteria identifying the Vlog that best demonstrated reading strategy development and progress in learning and goal setting (Appendix B). Chosen Vlogs were later used at student-led conferences, in digital portfolios, at in-school review committees, and for personal reflection.

Writing workshop. The Work on Writing component of the CRLP was redesigned to incorporate the use of iPad technology and integrated apps as semotic resources and were renamed Writing

[10] iBrainstorm is an app and multi-device collaboration tool using the premise of sticky notes to share and brainstorm ideas.

Workshop. The name was changed because students were doing more than working on writing. Students were involved in designing, creating, analyzing, and applying text in multimodal, multifaceted ways, sharing, collaborating, reworking, refining, revising, and engaging in intensive discussions, literacy activities, and writing; including all of the pedagogical moves identified by Cope and Kalantzis (2015).

Students had choices for writing venues such as blogs, Wikis and writing apps (e.g., Book Creator,[11] Write About This,[12] iBrainstorm, Popplet,[13] or Notability[14]) using social justice themes and critical literacies as the focus. Within the Writing Workshop a global forum was available to the students for feedback, responses, and collaboration through blogging using Kidblog. As with other components, co-constructed criteria were designed dealing with appropriate and effective blogging behaviours and how to give sufficient, useful, descriptive feedback. These skills were again modeled and explicitly reinforced and practiced using technology tools in the Guided Reading/Writing component. Although writing tasks varied, the iPads and interactive multiliteracies activities were consistently used or incorporated in all phases of the writing task (Appendix B). The Writing Workshop flowed into Word Work, which aligned with Guided Reading/Writing.

Word work. In this component, students used a number of different integrated iPad apps (e.g., Vocabulary Spelling City[15]) to work on personalized spelling lists taken from journals, notebooks, blogs, unedited posts, and class vocabulary lists from Science, Social Studies, Language, and Math units. Students had the option of creating a short instructional video using the apps Tellagami[16] or Sock Puppets[17] to explain the meaning of as many vocabulary words as possible to teach their audience about spelling strategies or unit vocabulary meanings. These videos were included in blogs, posted to Edmodo

[11] Book Creator is an iPad app book creating tool that allows you to pick images, text, and backgrounds; it can be uploaded to ibooks or Google Play Books.
[12] Write About This is an iPad app that is a visual writing prompt and creation writing platform.
[13] Popplet is a mind-mapping app that allows you to jot down and connect key ideas.
[14] Notability is a notetaking app that includes a variety of features including vocal record, image inclusion, video inclusion, etc.
[15] Spelling City is a game-based learning tool that allows students to practice individualized or whole class spelling and vocabulary lists.
[16] Tellagami is a presentation app that allows you to create a short animated video called a "gami."
[17] Sock Puppets is an app that allows you to create your own lip-synced videos using puppets, props, scenery, and backgrounds.

for class use, or posted to a public YouTube forum for global educational communities to use. The latter initiated a large global response and feedback was given to the students from a global audience during the Writing Workshop and Word Work component. During the Pilot Study, for instance, the students participated in a "word family" exercise using word families to create fractured fairytales with a focus on sexism. The students were exploring the app Hideout[18] to develop an understanding of word families and began participating in the assigned task (Appendix B), when one student decided to create her own word family based on the sexism theme that was not available in the app. From this student-lead initiative, all of the other students in the class created their own word families based on social justice themes (i.e., sexism, racism, heterosexism, ableism). Using a reflexive, multiliteracies pedagogical approach, I contacted the designers, Baird and Gundersen, of Hideout and explained what the students had created. As a result, Third Rail Games (2014) adapted and used the students' creations in an updated Hideout version released in November 2016. This example illustrates the spontaneity and flexibility of the IiLP and its openness to student-direction.

Strategy identifier. This component incorporates the Listen and Strategize portion of the CRLP but includes technology and involved multimodalities, changing the essence of the reading experience because of the different phenomenological (sensory and embodied) experiences involved in reading. Students negotiated their reading through multiple modes of gesture, gaze, and touch as a way of making meaning as they pursued digital-reading pathways (Simpson, Walsh, & Rowsell, 2013). After the students listened to a text being read aloud by an expert reader, they would read the text aloud themselves and with a partner. During this time, students identified the reading and thinking strategies they were using. The students then recorded their reading strategies in the notes section of the iPad, which were later referred to in the students' Vlogs. In the Strategy Identifier component of the IiLP, students were given the opportunity to record themselves reading the same digital text with the intent of comparing their recorded

[18] Hideout is an app that teaches early reading skills using phonic patterns and word families in context through games.

reading segment to that of an expert reader using the app Garage Band.[19] As students gained facility with these tasks, videos and podcasts were added. Students participated in a number of different literacy activities all designed to encourage strategy identification in a meaningful and authentic way. For example, students were directed to use Eduglogster[20] to create a response to the text they read which incorporated visual images, videos, hyperlinks, and written text. Students then Vlogged about the strategies they used to read and listen to the text and articulated why they responded to the text as they did on Eduglogster. Many times, these conversations continued into the Guided Reading/Writing component.

Guided reading/writing. Fostering literacy independence and developing critical thinking skills through the use of critical pedagogy by empowering learners, forms the basis of the Guided Reading/Writing component. The structure of Guided Reading/Writing is the same as in the CRLP structure except that the iPads, meaningful and purposeful apps and an interactive curriculum added the multimodality features and gave students access to multiliteracies through technology. Critical literacies remained the main focus of the Guided Reading/Writing component but they were supported through a variety of technological features and activities that modified and redefined traditional literacy tasks (Appendix B).

Apart from minor changes, the curriculum used for the Pilot Study was also the curriculum used for the Full Study. Any minor changes to the programs will be discussed in Chapter 4.

Pilot Study Setting

The site for the 2013-2014 Pilot Study was a balanced-calendar (full year) Kindergarten to Grade Five public school in a large metropolitan school district in Ontario. Instead of having a nine-week summer break, school commences in the last week of July. The summer weeks are re-distributed through the school calendar year with a two-week break at the beginning of October, an additional week added to the winter break in December, a week allotted in February, and an extra week added to the March Break.

[19] Garage Band is an app that turns your devise into a collection of touch instruments and a recording studio allowing you to make sophisticated music.
[20] Eduglogster is a cloud-based platform for presentation and interactive learning allowing you to make multimedia, online posters.

Over 400 students attend the school. Seventy percent of the school population is made up of two-parent families, with 50% of the school population being home owners and the other 50% rent. Sixty percent of the student population are newly landed immigrants from India (within the last two years), while the other 40% are immigrants from India (either directly or indirectly) but have been in Canada for more than two years. Ninety-nine percent of the student population speaks English as a second language. The predominant language spoken at home is Punjabi (75%), followed by Hindi (20%) and other languages (Urdu and Arabic 5%). (Retrieved from "Opening Day Demographic Surveys" obtained from the school and shown in Table 2)

Table 2

Site School Demographics

School Demographics	Percentage of Student Population
Family Status	
Two Parent Families	70%
One Parent Families	30%
Home Ownership	
Home Owners	50%
Renters	50%
Arrival to Canada	
Newly Landed Immigrants (>2 yrs.)	60%
Indian Immigrants (<2 yrs.)	40%
Primary Language Spoken at Home	
Punjabi	75%
Hindi	20%
Other (Urdu, Arabic, English)	5%

All research was conducted in my Grade Two classroom located on the second floor of the school. The physical set up of the classroom consisted of a carpeted area for group instruction, student desks, a conference table, and supporting literacy materials on the walls.

Pilot Study Participants

Although there was a turnover in classes from the Pilot Study to the Full Study, the basic school demographics remain the same. Twenty-three Grade Two students participated in the Pilot Study, partaking in both the CRLP and the IiLP curriculum as part of their daily literacy programming for a total of 80-minute double literacy blocks each day for 24 weeks. A one-to-one technology distribution model

(one iPad per student) was used for the IiLP. Students rotated between components according to a student-created rotation schedule for the literacy block. The Pilot Study was initially driven by my own professional teacher inquiry.

Implementation of Literacy Programming

The week-by-week implementation plan for the Pilot Study is described in Table 3, outlining the instructional procedures used based on the curriculum design explained above. Throughout the CRLP and IiLP training period and implementation, observations of reading and writing behaviours, communicative and collaborative strategies witnessed, and reading and comprehension strategies used by the students were recorded. Video recordings of each session were used to supplement the observational and anecdotal notes. All data collection tools will be explained in upcoming sections and will be referred to frequently for purposes of understanding both the Pilot Study and the Full Study.

Table 3

Implementation of Curriculum Design and Data Collection

Implementation Period	Curriculum Design Implementation
Week 1	Review of Norms of Collaboration Introduction to Bookmark Strategies Building Stamina for Reading and Writing Goal Setting and Metacognitive Reflection Implementation
Week 2 - Week 4 *Phase One*	CRLP- Training Period: Introduction to CRLP Components PM Benchmark Testing
Week 5 - Week 8 *Phase Two*	CRLP Component Rotation with Guided Reading
Week 8	PM Benchmark Testing
Week 9 – Week 11 *Phase Three*	IiLP- Training Period: Introduction to IiLP components Building Technology and Digital Literacy and Citizenship Metacognitive Reflective Vlogging
Week 12 - Week 15 *Phase Four*	IiLP Component Rotation with Guided Reading
Week 15	PM Benchmark Testing
Week 16 -Week 24	Continued Integrated iPad Literacy Program Implementation

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Data Gathering Tools

Two different types of data gathering tools were used in the Pilot Study and Full Study. The standardized tool was a PM Benchmark Reading Assessment (Nelson Education: Cengage Learning,

2010) used to assess student reading skill and comprehension levels, while the non-standardized tools were Norms of Collaboration, video recordings, observations, and anecdotal notes.

PM benchmark reading assessment. The PM Benchmark Reading Assessment (Nelson Education: Cengage Learning, 2010) is designed to assess students' instructional and independent reading levels using both fiction and non-fiction texts. This reading assessment tool was chosen because it is mandated by the board of education and the school in which the studies occurred.

The PM Benchmark Assessment levels begin at Level 1 and run to Level 30. Corresponding grade-level benchmarks are provided to suggest where the average student should be by the end of the year (Appendix D)[21]. Teacher instructional cards with corresponding "look-fors" and comprehension questions with possible answers are provided for each stage of the assessment to ensure accuracy and consistency in testing procedures. Students are first instructed to read through the leveled text independently while the administrator observes and records non-verbal and visual reading cues (e.g., lip movement, finger tracking, eye movement, body language). The next stage involves the student reading the text aloud to the administrator. A running record is performed at this time. A running record is an observation tool that allows teachers to make systematic and useful observations of their student's reading, which can feed directly into teaching decisions (Clay, 1985). Running records capture what students understand and know about the reading process. In essence, they capture the child's thinking. The running record does not just record the correct and incorrect reading of words; it requires the examiner to observe all behaviours associated with the reading process to help determine the "thinking process" children are using while they are reading text. In the event that the child encounters difficulty, the examiner provides the word for the child. A student's oral reading behaviours are captured using standard annotation conventions, which include repetition of words, omissions, and self-corrections. The teacher then calculates the child's self-correction ratio, accuracy rate, and error ratio. The teacher

[21] Three different levels (4, 14, and 24) of PM Benchmark Reading Assessment examples are provided in Appendix D to gain a better understanding of the reading assessment tool that was given to the Grade 2 students to measure their instructional and independent reading level and comprehension level (Nelson, 2013).

analyzes each incorrect response and identifies whether the student's incorrect response was related to visual information, structure, or meaning. At this time the results are interpreted and examined for overall patterns, leading the teacher to make a final evaluation of the student's reading behaviour.

Following the running record, students are asked to retell the text in their own words. The retelling is followed by literal and inferential comprehension questions in the PM Benchmark Toolkit which act as indicators for the administrator to assess and analyze each students' independent, instructional, and frustration reading levels based on norm-referenced data.

A student is deemed to have an independent reading level when their accuracy rate is over 94%. This is a text the student is able to read by himself or herself without teacher support. A score of 9-10 on the PM Benchmark Assessment is considered to be at the independent level. A student's reading level is determined to be instructional when an accuracy rate between 90-94% and a score of 7-8 is obtained. This is a text the student can use to learn to extend their use of cuing systems with guidance from the teacher. Last, a child's frustration reading level is determined when a student's accuracy rate is below 90% or they obtain a score of 1-6 on the PM Benchmark assessment. In the Pilot Study, I was aware of student scores based on the level outcomes and took more time examining the student's running records in comparison to the retell and questions.

The PM Benchmark Reading Assessment according to Nelson Publishing Company, is robust in terms of validity and reliability[22]; however, I found limited information available concerning the research base of the assessment tool even after several phone and e-mail inquiries to Nelson. This would certainly not have been the reading assessment tool of choice; however, due to the fact that the PM Benchmark Reading Assessment was strictly mandated by the board and the school, this was the tool used for assessing student's reading skill and comprehension attainment. The texts that comprise the PM Benchmark kit according to Nelson, the company that produces them, have been tried and tested with students of varying ages and abilities to assure readability and suitability for specific levels (Nelley &

[22] (https://www.nelson.com/pmfamily/documents/PM_Benchmark_Brochure.pdf)

Smith, 2000). Chaaya and Ghosn (2010) used the PM Benchmark kit to assess second language learners to identify gains in reading levels as a result of guided reading and strategy instruction. Although the analysis of this data collection tool was not the basis for their research, Chaaya and Ghosn (2010) used the PM Benchmark kit over the course of their year-long study.

On the positive side, I found the PM Benchmark Assessment kit to be manageable and user friendly, and it gave explicit instructions for the examiner as well as expected responses that the examiner might hear from the student on the question portion to use as criteria for scoring purposes.

I chose to assess my students reading level every four weeks using the PM Benchmark Assessment kit in order to analyze reading ability and comprehension levels and allow this formative assessment to drive instruction. In the Pilot Study and Full Study, a pretest was given to the students at the beginning of the school year to determine the students' independent, instructional, and frustration reading levels for student groupings. The PM Benchmark Assessment was administered in six-week intervals, coinciding with the CRLP and IiLP training and sessional periods. I continued that assessment for the duration of the Pilot Study year in order to follow student progress, and used the results to generate student reading scores using standardized means.

Norms of collaboration. Collaboration among peers is a means of revolutionizing thinking and learning experiences (Blumenfeld, Marx, Soloway, Krajcik, 1996). The school and everyone involved in this study adopted the board of education and school-supported the "Norms of Collaboration" instructional strategy that encourages and fosters collaboration among students (Garmston & Wellman, 2009).[23] Research suggests that when collaborative learning groups are used loosely with no framework or criteria, they can in fact emphasize the vast differences in status and ability levels and generate inhibited connections and exchanges between peers and groups (Duron, Limbach & Waugh, 2006). Therefore, to alleviate this negative outcome of collaborative work, the students in this study were

[23] The Norms of Collaboration are based on decades of research and practice in various fields, including counseling, coaching, group dynamics, facilitation, and professional learning communities. They constitute best practice documented in education. (Kennedy, Deuel, Nelson, & Slavit, 2011).

explicitly taught the seven Norms of Collaboration and these norms were infused into every aspect of the program from the onset of the school year. I adapted the "Norms of Collaboration" (Garmston & Wellman, 2009) drawing on my own teaching for looking at collaboration and group dynamics. The seven Norms of Collaboration describe skills and abilities necessary so that groups develop collective meaning and effectively solve problems to achieve common goals. The seven Norms of Collaboration are pausing, paraphrasing, posing questions, putting ideas on the table, providing data, paying attention to self and others, and assuming positive intentions. In order to situate the Norms of Collaboration as a data-gathering tool, a brief description of each norm is required.

Pausing. Pausing means that before responding or asking a question of a group member, one is allowed time for thinking, which in turn enhances dialogue, discussion, and decision-making. In the CRLP and IiLP, students would ask each other if they needed "coaching or time," meaning whether they needed help in figuring out an idea or word or time to pause and think.

Paraphrasing. According to Garmston and Wellman (2009), paraphrasing allows a student to ensure they understand the gist of what a peer is saying. Paraphrase starter sentences are often used by students (i.e., what I hear you saying, the way you are thinking is that) and followed by a paraphrased summary of the student's account of what they heard their peer or group member say. This helps group members ensure they understand what is being communicated in order to make effective decisions.

Posing questions. The norm of posing questions is intended to explore information and provocations and to specify thinking based on these inquiries. Questions are designed to investigate inquiries, assumptions, misconceptions, perceptions, and interpretations. Examples of such questions are: "What predictions can you make?" or "How can assumptions be made based on the information that you have explored?" Posing questions that require students to clarify their understanding of content items or their thinking can help to improve the group's overall thinking and understanding. Finally, posing questions is used to probe the ideas of others by seeking first to understand, then formulating opinions allowing students to better understand one another.

Putting ideas down on the table. Indicates that ideas are recognized as being the nucleus of significant communication and discussion (Webb & Jones, 2009). Examples of explicit putting down of ideas are: "There is one idea…" or "Another consideration might be…." Putting ideas down on the table allows for students to consider differing points of view and remain open and fair-minded to other ideas and opinions.

Providing data. Providing data, Garmston and Wellman (2009) suggest, involves students justifying and supporting their thinking with explicit evidence and examples from a text, experience, or situation. Providing both qualitative and quantitative data in different modes aids group members in creating a collective appreciation of their work. Through collaborative efforts, groups develop a shared meaning of data through its analysis and interpretation (Hmelo-Silver, 2003). Providing data not only provides support for an argument, but also cohesively links the group by providing substance and proof of ideas which are more likely to be accepted and honoured with support.

Paying attention. Paying attention, for Garmston and Wellman (2009) means that students attend to each other's feelings, make a point of understanding their perspectives and perceptions, and are conscious of their role in the group. As a result, discussion and dialogue becomes meaningful and outcomes, successful.

Presuming positive intentions. Presuming positive intentions means that members assume their peers have positive intentions. Presuming positive intentions helps to create a trusting environment where peers are more willing to take risks and give opinions that might be contrary to the group consensus. Orally expressing positive intentions to other group members is one manifestation of this norm (Ellemers & Rink, 2005).

Based on theoretical and empirical investigations by Blumenfeld, Marx, Soloway, and Krajcik (1996) and Garmston and Wellman (2009), partner and small group work is a means to bettering student perceptions, nurturing student achievement, developing interpersonal and intrapersonal skills, and developing critical and creative thinking skills. Nevertheless, learning from peers in cooperation and collaboration is complex and difficult to achieve. In order for collaborative and cooperative learning

models to work effectively, some type of formalized structure is recommended which is why the seven Norms of Collaboration were explicitly taught and practiced in the Pilot Study and Full Study. The Norms of Collaboration were used from the onset of the school year so that students would be comfortable working with one another and accountable for their work, actions, and contributions. A Norms of Collaboration checklist based on the features listed above was used to analyze video footage to identify collaborative and communicative instances among peers. At the end of the day I reviewed the video footage of the literacy session, focusing on the Norms of Collaboration for four or five students at a time. By the end of each week, I had completed a Norms of Collaboration checklist for each student, both for the CRLP and IiLP of the Pilot Study and Full Study.

Observations/anecdotal notes. Observational/anecdotal notes are used to describe behaviours and processes (Zepeda, 2014). Observation involves the thorough attention to and description of students' behaviour and performance. In the Ontario Kindergarten to Grade 3 Language Arts curriculum (Ontario Ministry of Education, 2006), observation is deemed the greatest form of assessment educators can use. Focused observations allow teachers to watch students showcase their understanding of content as they participate in daily classroom tasks, particularly the processes of reading, writing, and interacting with peers. Observations can be used whenever an educator wants to record accounts of specific instances of learning strategies and language processes for an individual student (Nicolson & Shipstead, 2002). During Guided Reading/Writing, I was focused on the students with whom I was working, observing key actions related to thinking tools, strategies, and concept understanding.

For the Pilot Study and Full Study, I made anecdotal notes to support my focused observations during the Guided Reading/Writing component in both the CRLP and IiLP. My observations were focused primarily on reading, writing processes, and actions related to thinking. For the group of four to six students who were at the Guided Reading/Writing component, I recorded explicit examples and demonstrations of decoding and comprehension reading strategies used, writing conventions and text forms, habits of mind and thinking techniques shown through oral discussion, and justification of student ideas. Further, evidence of engagement and Norms of Collaboration among group members were

documented using a checklist organized into "look fors" with a section for anecdotal notes. For the CRLP, a paper and pencil checklist was used, and for the IiLP the checklist was AirDropped into the app Explain Everything for ease of organization and documentation. These observations were made at every Guided Reading/Writing session. Anecdotal notes were also taken from the daily video recorded classroom footage of the other components in session. According to the Ontario Language Arts Curriculum (Ontario Ministry of Education, 2006), anecdotal comments should direct educators to analyze and recognize learning relationships that appear over a period of time. Observations that are both systematic and incidental in nature warrant anecdotal comments that, when reflected on, generate powerful evidence for formulating decisions about students' literacy progress (Santiago, Donaldson, Herman, Shewbridge, 2011).

Video recordings/footage. Video recordings of teaching sessions and literacy sessions allowed for the documentation of non-verbal behaviours. Video recordings were conducted daily to supplement observational data and to put "eyes on" the rest of the classroom while I was working with a small group of students during Guided Reading/Writing. The recording device was a flip camera and was positioned at the side of the classroom allowing for a full view of the classroom and all of the groups. At the end of each day, the 80-minute recorded literacy session was uploaded to a MacBook computer, and using the app HearMeNow,[24] I was able to focus in on individual groups and hear any discussion where possible and observe any actions pertinent to the focused observations. Using the same frequency checklist from the Guided Reading/Writing observations, I watched the video footage for each group and wrote anecdotal notes commenting on specific examples and demonstrations of actions or strategies.

To ensure that the presence of recording device would not influence student behaviour, the flip camera was introduced to the class prior to the Pilot Study and Full Study and was used during all of the training sessions. The recording device was positioned in the same location each time. Within the first week or two of the camera being a permanent fixture in the classroom, students began to ignore its

[24] Hear Me Now is an app that is a personal sound amplifier. It allows you to magnify the volume of any recorded footage and hone in on specific areas and discussions within a video creating better auditory capabilities.

presence altogether. This was apparent through student comments as captured on the video camera, including “Is this thing still on?” or “Oh geez (as a boy trips over the tri-pod), I didn't realize this was still here,” and “I completely forgot about the video camera” (as a student almost sat on the foot of the tripod despite the fact it was tucked away at the side of the classroom).

Pilot Study Findings

The findings from the Pilot Study are divided into a discussion of the analysis and findings for standardized data collection instruments and for non-standardized data collection instruments.

Analysis and Findings for Standardized Data Collection Instruments

PM Benchmark data were gathered 7 times across the September to June period. Scores are presented in terms of the levels associated with PM Benchmark with the lowest level being 1 and the highest level being level 30. This data were summarized using descriptive statistics and I was interested in examining the gains students made across the period of the study. Table 4, shows that entrance-level reading scores were far below the expected Grade 2 reading level of 17 on the PM Benchmark scale for all but two students. By the end of the year, findings showed gains in reading ability and reading comprehension levels in all students with ten students scoring above the expected level, five scoring at the expected level and only seven scoring below the expected level[25].

[25] The subscript ^{B} in the table indicates a student reading below grade level, an ^{L} refers to students reading at grade level, while an ^{A} represents students scoring above Grade Two reading level in reading skill and comprehension on the PM Benchmark Assessment.

Table 4

PM Reading Levels- Grade 2 (2013/2014)

	CRLP Curriculum		IiLP Curriculum					
Student	**Sept**	**Oct**	**Dec**	**Jan**	**Mar**	**May**	**June**	**Gain Score (Aug-June)**
001	9 B	10	12	14	17	21	24A	15
002	10B	13	16	19	23	24	26A	16
003	10B	11	14	15	16	20	22L	12
004	17L	19	20	23	24	26	28A	11
005*	8B	**	12	14	15	15	19B	11
006**	1B	3	4	7	8	11	14B	13
007	9B	11	15	17	18	21	23A	14
008	9B	11	16	20	21	22	23A	14
009	9B	11	15	18	19	19	22L	13
010	13B	14	18	19	21	21	23A	10
011	4B	6	6	9	14	18	21L	17
012	20A	21	21	22	24	28	29A	9
013	7B	8	12	16	17	19	22L	15
014	4B	5	6	10	12	15	19B	15
015	7B	8	10	14	16	18	21L	14
016	9B	10	12	15	16	21	23A	14
017	3B	5	8	10	13	14	17B	14
018	12B	15	16	17	20	22	24A	12
019	4B	5	6	8	14	16	19B	15
020**	NoB letter sounds	1	3	7	8	9	11B	11+
021	13B	14	18	19	21	23	25A	12
022	1B	4	5	8	10	16	18B	17

Table 4 demonstrates that the students in this Pilot Study progressed on average, one to five Benchmark reading levels every 2 months while in the IiLP. Most notable were the cumulative results from the beginning to the end of the year. At the beginning of the year, the reading analysis indicated that 92% of students were below the expected Grade Two entry reading ability level, while 4% of the class was at level and 4% were above a Grade 2 reading level (Figure 5).

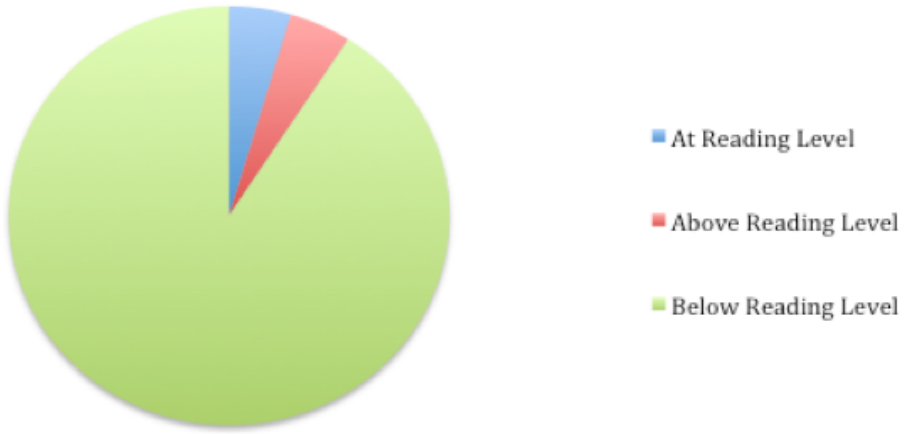

Figure 5. PM Benchmark Assessment Grade 2 Reading Levels- September 2013

By the end of the year, 16% of the students were below the expected level, 12% were at the expected level, and 72% were above the expected level for second grade (Figure 6).

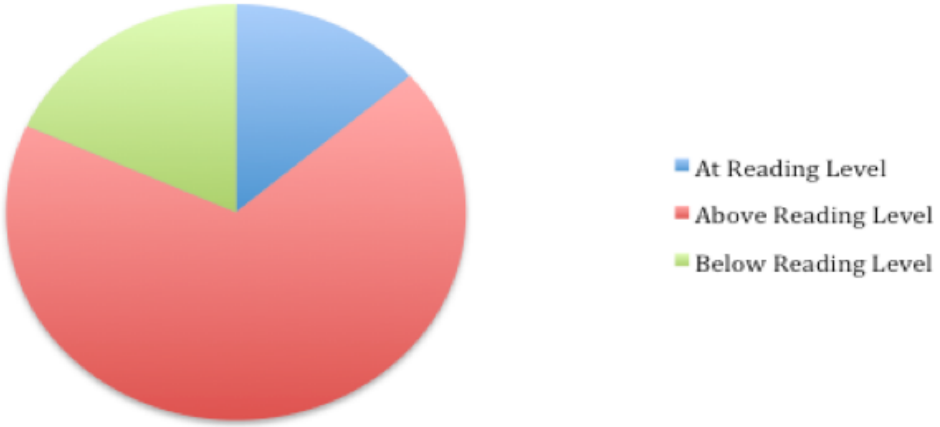

Figure 6. PM Benchmark Assessment Grade 2 Reading Levels- June 2014

These findings document considerable reading gains over the course of one school year, which led me to consider that if this study were replicated, I would likely be able to further investigate the relationship that exists between integrated iPad use coupled with the meaningful and purposeful use of apps and scaffolded through multiliteracies and multimodalities pedagogies, with student reading achievement, skill development, improved collaboration among students, and increased reading engagement.

Analysis and Findings for Non-standardized Data Collection Instruments

Although I gathered a tremendous amount of data in my capacity as a teacher, I did not engage in a systematic analysis of that data. Instead, I am reporting here on my overall sense of the non-standardized data. Overall, I observed an increase in collaborative dialogue among students and greater engagement in literacy tasks based on observable on-task behaviour. Students demonstrated greater engagement in literacy tasks and were consistently sharing their work with a partner when participating in the IiLP as compared to the CRLP. Based on observational and anecdotal notes and the reviewed digitally recorded segments, students were discussing ideas, conversing on topics, asking peers to edit and look over their work, and justifying their ideas on varying tasks. The integrated iPad, app, and multiliteracies pedagogical implementation produced a great deal of partner sharing and collaboration in addition to the inclusion of critical dialogue, which was unexpected due to the nature of the task design (one-to-one iPad design). Although students were working on their own iPads, the Grade Two students were observed routinely conversing with a partner about their work, reporting their progress, troubleshooting, presenting end products, rehearsing ideas, collecting opinions and feedback on tasks, and simply sharing new discoveries, all the while demonstrating the Norms of Collaboration within class. In addition to increased critical and on-task dialogue among my students, verbal discussions and written responses were layered with more and more breadth and depth as sessions continued, particularly through student blogs. As well, it appeared as though students' critical thinking strategies were expanding based on the magnitude of self- and class-created blogging topics (i.e., Men vs. Women's Opportunities Through Sport, Child Labor in India, and Impacts of Traditions and Celebrations on Families in Different Parts of the World), and this shift in thinking strategies filtered into all other areas of the curriculum.

In the Guided Reading component, students were frequently using decoding and comprehension strategies that had either been taught in the current lesson or connected to previous lessons. Norms of Collaboration (Garmston & Wellman, 2009) were demonstrated and accessed more readily and more often in the IiLP context, possibly due to the increase in collaborative dialogue among partners and small groups. Further, by the end of the Pilot Study, all students were able to access all of the integrated apps

and iPad features confidently and competently, and they effectively collaborated with their peers whenever they were experiencing difficulty. These findings demonstrated so much potential for further research and program implementation that I decided to draw on the positive elements of the Pilot Study and look to using its limitations to make changes to design the Full Study.

Limitations of the Pilot Study

The data collection methods I used in the Pilot Study did not include the perceptions of the participants. Therefore, in designing the Full Study, I included both parent and student questionnaires for perceptions of reading motivation and achievement, and technology usage. I felt this information could account for things such as students' varying engagement levels as they progressed through the study. The Pilot Study lacked information on levels of motivation to read based on students perspective of themselves as readers and the perspective of parents. In addition, the Pilot Study lacked information on how much exposure to technology and skill with technology students had developed at home (again from the student's and the parent's perspective) and how this might have affected each student's success in the IiLP. To account for these limitations, I added the Technology Usage Inventory in the Full Study. Although I obtained scores for each student from the PM Benchmark Assessments, the Pilot Study did not document the student's perspectives and the parent's perspectives on gains. For the Full Study, I chose to include student and parent interviews to gauge perceptions of children's progress in reading behaviours, ability, engagement, at-home technology usage, comfort levels, and use of technology for educational purposes.

In the Pilot Study more time than was needed was spent training students on components of the program. Students were able to handle more than just the same two components for an entire week, so I changed the implementation procedure for the Full Study so that these components were introduced on the first day of training and then practiced simultaneously in the following training weeks.

The Pilot Study was limited because it was conducted on one class which meant that the improvements could have been due to my own success as a teacher or the particular class. For the Full Study, I included two experimental groups and one control group to eliminate the teacher effect, and

address generalizability. Using two other classes in addition to my own for the Full Study helped to rule out the potential for competing explanations such as the possible influence of particular teachers. Creating a control group and two experimental groups allowed me to consider the effects of the CRLP alone in order to determine the effects of the integrated iPad and carefully selected apps and multiliteracies literacy activities had on student success.

CHAPTER 4

METHODOLOGY FOR THE FULL STUDY

The purpose of this study was to investigate the impact of the absence or presence of digital technology as part of a daily literacy program on second grader's reading achievement, skill development and engagement, collaboration and learning, and student and parent perceptions of reading ability and engagement. Following a Pilot Study (See Chapter 3) changes were made for the Full Study in research design, methods, and data sources. This chapter presents these changes and discusses the ways in which they have provided support for my research conclusions. Table 5 is separated into four parts and presents an overview the changes in methodology from the Pilot Study to the Full Study.

Table 5a

Overview of the Design

Procedures	Pilot Study	Full Study
Research Design	• Mixed methods-no theorization • One experimental group	• Mixed methods- working off of the grounded theory model and concurrent triangulation design model • Two experimental groups and one control group
Data Methods	(a) PM Benchmark Reading Assessment (b) Observational and anecdotal notes (c) Video recordings (d) Norms of collaboration	(a) PM Benchmark Reading Assessment (b) Observational and anecdotal notes (c) Video recordings (d) Norms of collaboration (e) Student motivation to read questionnaire (f) Parent motivation to read questionnaire (g) Student technology usage surveys (h) Parent technology usage surveys (i) Parent and student interviews
Setting Sample	• One classroom • Grade 2 Class: 23 students, no parents	• 3 adjacent classrooms used • Grade 2 Classes: 58 students, 58 parents • 2 experimental classes (iPad), one control class (non-iPad)
Curriculum Design	• CRLP and IiLP- critical literacies and social justice pedagogy	• CRLP and IiLP- critical literacies and social justice pedagogy

Table 5b

Phase 1 of the Full Study

Phase 1 Procedures	Pilot Study	Full Study	Full Study
August **Week 1**	**Experimental Group** • Review norms of collaboration • Introduction to bookmark strategies • Building stamina • Goal setting and metacognitive reflection implementation	**C[26]** • PM Benchmark • Review norms of collaboration • Introduction to bookmark strategies • Building stamina • Goal setting and metacognitive reflection implementation • CRLP training period- all components introduced and practiced • PM Benchmark Pre-Assessment	**E1 and E2[27]** • PM Benchmark • Review norms of collaboration • Introduction to bookmark strategies • Building stamina • Goal setting and metacognitive reflection implementation • CRLP training period- all components introduced and practiced • PM Benchmark Pre-Assessment
Week 2	• CRLP training period- read and reflect and reflective partner reading	• CRLP training period- all components	• CRLP training period- all components
Week 3 September	• CRLP training period- word work and listen and strategize	• CRLP training period- all components	• CRLP training period- all components
Week 4	• CRLP training period- writing workshop, guided reading	• PM Benchmark Assessment • CRLP full implementation	• PM Benchmark Assessment • CRLP full implementation
Week 5	• CRLP full implementation	• CRLP full implementation	• CRLP full implementation
Week 6	• CRLP full implementation	• CRLP full implementation	• CRLP full implementation
October **Week 7**	• CRLP full implementation	• CRLP full implementation	• CRLP full implementation
Week 8	• CRLP full implementation • PM Benchmark Post-Assessment	• CRLP full implementation • PM Benchmark Assessment	• CRLP full implementation • PM Benchmark Assessment

[26] C-Control Group
[27] E1- Experimental Group 1 and E2- Experimental Group 2

Table 5c

Phase 2 of the Full Study

Phase 2 Procedures	Pilot Study	Full Study	
November **Week 9**	• IiLP training- *read, record, reflect* • Building technology and digital literacy • Digital citizenship guidelines • Vlogging	**C** • CRLP full implementation cont'd	**E1 and E2** • IiLP training- *read, record, reflect* • Building technology and digital literacy • Digital citizenship guidelines • Vlogging
Week 10	• IiLP training- word work and writing workshop	• CRLP full implementation cont'd	• IiLP training period- all components
Week 11	• IiLP training- strategy identifier and guided reading	• CRLP full implementation cont'd • PM Benchmark Assessment	• IiLP training period- all components • PM Benchmark Assessment
Week 12	• IiLP full implementation	• CRLP full implementation continued	• IiLP full implementation
January **Week 13**	• IiLP full implementation	• CRLP full implementation cont'd	• IiLP full implementation
Week 14	• IiLP full implementation	• CRLP full implementation cont'd • PM Benchmark Assessment	• IiLP full implementation
Week 15	• IiLP full implementation	• CRLP full implementation cont'd	• IiLP full implementation
Week 16	• IiLP full implementation	• CRLP full implementation cont'd • PM Benchmark Assessment	• IiLP full implementation • PM Benchmark Assessment
February **Week 17**	• IiLP full implementation	• CRLP full implementation cont'd	• IiLP full implementation
Week 18	• IiLP full implementation	• CRLP full implementation cont'd	• IiLP full implementation
Week 19	• IiLP full implementation	• CRLP full implementation cont'd • PM Benchmark Assessment	• IiLP full implementation • PM Benchmark Assessment

Table 5d

Phase 3 of the Full Study

Part 3 Procedures	**Pilot Study**	**Full Study**	
March **Week 20**	**<u>Experimental Group</u>** • IiLP full implementation	**<u>C</u>** • IiLP training period- all components • Building technology and digital literacy • Digital citizenship guidelines • Vlogging	**<u>E1 and E2</u>** IiLP full implementation
Week 21	• IiLP full implementation • PM Benchmark Assessment	• IiLP training period- all components	• IiLP full implementation
April **Week 22**	• IiLP full implementation	• IiLP training period- all components • PM Benchmark Assessment	• IiLP full implementation • PM Benchmark Assessment
Week 23	• IiLP full implementation	• IiLP full implementation	• IiLP full implementation
Week 24	• IiLP full implementation	• IiLP full implementation	• IiLP full implementation
Week 25-32 (Implementation of IiLP continued through to the end of the year with PM Benchmark Assessments being executed every four weeks for the Pilot and Full Study	• IiLP full implementation	• IiLP full implementation • PM Benchmark Assessment • Post study interviews	• IiLP full implementation • PM Benchmark Assessment • Post study interviews

Research Design

There are two aspects to the design of the Full study: 1) a quasi-experimental design which is how I structured the context and 2) mixed methods for data collection.

A quasi-experimental design (Campbell & Stanley, 1963) was used in the Full Study. Three grade two classrooms were used in the Full Study. My grade two class was one of the two experimental groups. The other two teachers and their classes were assigned to the remaining experimental condition or the control condition. The design I used was a variation of what Campbell and Stanley (1963) named the

Pretest-Posttest Control Group Design. This allowed me to determine "the casual impact of a manipulation on its participants without a completely comparable baseline as evident in classrooms" (Campbell & Stanley, 1963, p. 35).

A mixed-methods data collection procedure, specifically the Triangulation Design Model (Creswell & Plano Clark, 2007), was used for the present research. Creswell (2014) suggests that the variation of data collection in a mixed methods model using both qualitative and quantitative data collection leads to greater validity. Approaching research questions from multiple perspectives results overcoming some of the limitations arising from using one method only (Creswell, Plano Clark, & Garrett, 2008). Using a mixed methods model to conduct the Full Study, I was able to collect and analyze the data concurrently.

A triangulation design model (Figure 7) was chosen because both quantitative and qualitative data are collected simultaneously giving each equal priority.

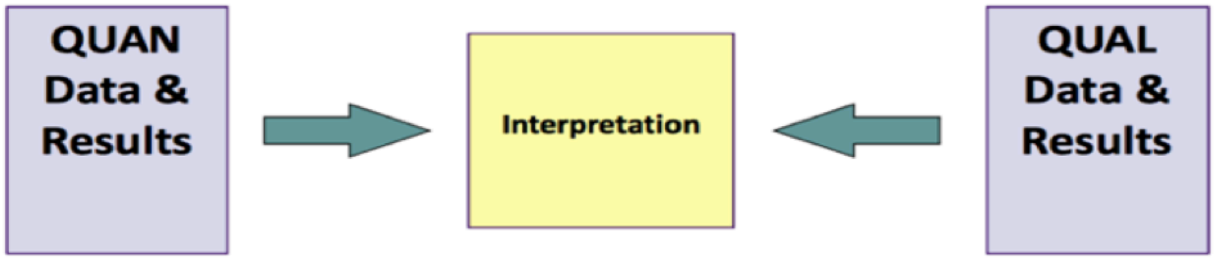

Figure 7. Concurrent Mixed Methods Triangulation Design Model

Questions that were asked using this Concurrent Mixed Methods Triangulation Design Model included:

a) Were there significant differences between the Control Group (C), and the two Experimental Groups (E1 and E2) on composite scores of PM Benchmarks in Phase 1 (the CRLP for all groups condition) of the study?

b) Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks across the full duration of the study (Phases 1, 2, and 3)?

c) Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks across Phase 2 of the study (the CRLP and IiLP contrast period)?

d) Prior to the onset of the CRLP and IiLP curricula, C, E1 and E2 were there differences between parent and student perceptions of student engagement and student ability as measured by adaptations of the AMRQ/SASQ?

e) Prior to the onset of the CRLP and IiLP curricula, for C, E1 and E2 were there differences between parent and student perceptions of student technology use and student comfort with technology as measured by adaptations of the TUI?

f) Were there differences in reading strategy use between C, E1 and E2 as indicated in observations of Guided Reading sessions, student Vlogs, and parent interviews?

g) Were there differences between C, E1, and E2 in engagement (as indicated by participant behaviour and embodiment) and articulations of pleasure in monthly randomly selected video observations?

h) Were there differences between C, E1, and E2 in time on task and off task behaviours in monthly randomly selected video observations?

i) Were there differences between C, E1 and E2 in technology usage and comfort with technology before and after the study?

j) Were there differences between C, E1, and E2 in Norms of Collaboration demonstrated in monthly randomly selected video observations?

k) What is the difference in engagement levels to reading comprehension and skills development between students in CRLP as compared with students in IiLP contexts?

l) To what extent are the experiences of reading engagement heightened across all study participants?

Although the quantitative and qualitative data are reported on separately, the triangulation design allowed me to bring them together to present an interpretation of the data sets as a whole.

Setting and Participants

The site of the Full Study remained the same as that of the Pilot Study (See Chapter 3) except that three Grade 2 classes were used in the Full Study. The three classrooms were adjacent to each other with the control group being located physically in between the experimental group classrooms.

Informed Consent

Informed consent was sought from the students and their parents. Several steps were taken to ensure that participants' rights were protected. Due to the nature of the study, there was no risk to the participants. Students did not lose instructional time as the study was part of the students' regular literacy program. Parents were given the choice to participate in the questionnaires and interviews. There was also no risk to participating teachers as they were trained by the researcher to implement the CRLP and the

IiLP. To maintain confidentiality of data and to protect the identity of the participants, the names of the students, parents, and teachers were coded and anonymized. All data collected from the study will be kept in a locked cabinet for five years and then destroyed. Ethics permission was granted from both the board of education in which the study was conducted and the participating university.

Due to a high population of English Language Learners among both parents and students, I offered an information evening for the parents to review the informed consent and pre-study questionnaires to ensure they fully understood the nature of the study. A one-hour session was hosted in the gymnasium of the study school for the parents of all participating Grade 2 students in August 2014. The principal, vice-principal, myself as teacher-researcher and the other two Grade 2 teachers were present. As well, a Punjabi/Hindi interpreter was in attendance to translate all of the information presented at the session to the parents. During this session, parents were introduced to the study, and parent and student consent forms were read and simultaneously translated to Punjabi and Hindi as well as being visually represented in English, Punjabi, and Hindi over the LCD projector. The entire session was videotaped and later reviewed by the researcher and an alternate interpreter to ensure consistent explanations were provided for the required documents. Every parent was given a copy of the informed consent and had the option to complete the form and submit it while at the information session or take it home for further perusal and return it with their child to school within the week. The form was available in both English and Punjabi but not in Hindi because it was brought to the researcher's attention by the parent community that a written Hindi interpretation was not necessary and a Punjabi interpretation was sufficient. Following the informed consent explanation, the parents were introduced to the parent version of the Adapted Motivation to Read Questionnaire and Technology Usage Inventory (see Appendices F and G). Again, parents were able to complete and submit the surveys at the information meeting or complete them at home and return the surveys to the school with their child. Finally, parents were given the opportunity to ask any questions about the study with the help of the translator, which ensured all necessary measures were taken to guarantee that the parents had a thorough understanding of the study and their child's and their own involvement.

Participants

Three Grade 2 teachers were involved in this study. I was one teacher in the other experimental class because I felt it necessary to be the teacher for one of the two experimental classes for ease of testing and program implementation. Each of the other teachers was randomly assigned to either the experimental or the control group. Like me, the two other teachers had taught Grade 2 the previous year. They were both trained in implementing the CRLP and the IiLP, giving them extensive experience with both literacy programs. I had been teaching for thirteen years when the Full Study began. The teacher of the second experimental class is male and had been teaching for nine years at the time of the Full Study. The teacher of the control group is female and was in her third year as a teacher, two years of which she has been a Grade Two teacher. This teacher had also served as a teacher candidate in my classroom during her teacher preparation program and was familiar with the literacy curriculum and my approach to implementing it.

A total of fifty-eight students from the three Grade 2 classes participated in this study. Each student had one parent take part in the study by means of completing two pre-study surveys and a post-study interview. Of the 58 parents who responded to the survey and interview questions, 43 were male and 15 were female. Most parents had completed high school (97%), 61% completed university, and 14% completed a post-graduate level (i.e., Master, Doctorate, MBA).

Table 6 shows the basic demographic data of the participants in the Full Study and demonstrates the fairly similar class size between the three study groups, as well as male to female ratio and mean age.

Table 6

Study Participants from Experimental and Control Groups

Class	Total Number of Students	Male	Female	Mean Age
Experimental 1	20	10	10	7.4
Experimental 2	18	7	11	7.6
Control	20	10	10	7.3

Data Collection Instruments

The Full Study draws standardized and non-standardized methods of data collection uses. The Full Study used the PM Benchmark Reading Assessment as a standardized data collection tool. The Full Study also used Observational and Anecdotal Notes, Video Recordings, and Norms of Collaboration. Added to the non-standardized data collection tools for the Full Study were: the student created Student Attitudes and Skills Questionnaire, parent Adapted Motivation to Read Questionnaire, the student and parent Technology Usage Inventory, and parent and student interviews.

PM Benchmark Reading Assessment

The PM Benchmark Reading Assessment is described in Chapter 3 and is an instrument used to assess students' reading skill development, level of development, and comprehension levels. PM Benchmarks was administered 10 times across the study (see Table 7). Administration times were relatively evenly dispersed within each of the phases.

Table 7

PM Benchmark Administration Schedule

Phase	Control Group (C)- Number of Times PM Benchmarks are Conducted	Experimental Groups (E1, E2)- Number of Times PM Benchmarks are Conducted
Phase 1: CRLP for all groups	3	3
Phase 2: CRLP for C group, IiLP for Experimental Groups	4	4
Phase 3: IiLP for all groups	3	3

Observations and Anecdotal Notes

Focused observations and anecdotal notes were taken for the duration of the Full Study. These data collection protocols are described in Chapter 3. Teachers compared their observational and anecdotal notes regularly at team meetings and during common planning times to ensure consistency between notes. The only addition to this data collection method was the inclusion of a frequency count checklist with accompanying anecdotal notes that were used to record Norms of Collaboration, reading behaviours, time-on-task, articulation of pleasure, engagement, and other non-verbal behaviours.

Video Recordings

As in the Pilot Study, daily video recordings of the treatment sessions in all three classes were taken and used to supplement the observations for the duration of the Full Study. As in the Pilot Study, the video camera was located in the same position for the duration of the Full Study in each classroom and was positioned in such a way to capture the whole class. The video recordings were reviewed regularly by teachers to ensure consistency within classrooms and between programs. Each month, one randomly selected video recording for each of the three grade two classes were transcribed to facilitate comparison with other data sets. This form of data collection occurred at the onset of the study and continued through to the end of the 32-week period.

Questionnaires

An 'Adapted Motivation to Read Questionnaire' (AMRQ) that reported on parent perceptions of their child's reading ability and engagement and a 'Student Attitudes and Skills Questionnaire' (SASQ) that reported on student perceptions of reading ability and engagement were administered prior to the commencement of the Full Study. At this time, a parent and student Technology Usage Inventory, which reported on perceptions of overall technology usage on a personal and academic level as well as comfort levels with different technological interfaces and modalities was also completed. One parent for each child participated in the questionnaire and inventory.

Adapted Motivation to Read Questionnaire. The Adapted Motivation to Read Questionnaire (AMRQ) (See Appendix F) reported on a child's reading level and motivation. This questionnaire was originally developed by Wigfield and Guthrie (1995) to measure various characteristics of students reading motivation. In 1997, Wigfield and Guthrie refined the questionnaire and aligned it with motivational reading research by clustering questions according to categorical areas. I found that the original version of 82 items was far too cumbersome for students and parents. The revised version contains 53 items; however, this was further condensed to 18 items and adapted so that the focus included items on digital technology for use as a pre-test in helping to understand parental perceptions of their child's reading motivations.

Compared to other similar questionnaires (DeBaryshe & Binder, 1994; Gonzalez-DeHass, Willems, & Doen-Holbein, 2005), the AMRQ is unique in its focus specifically on the parent's perception of their child's motivation to read with a few questions geared toward their child's reading behaviour and reading frequency at home. The other questionnaires are geared primarily towards what parents do to motivate their child to read and the length of time they spent reading to their child, with little focus on the parent's perception of their child's reading behaviour and attitude towards reading. However, the 1997 MRQ questionnaire to be more relevant to contemporary literacy contexts, several options focused on multiliteracy tools (i.e., iPads, tablets, web-based resources) were added. Section one, which includes question one, asks who will be filling out the questionnaire. Section two, which is made up of questions two and three asks about students' past reading engagement. Questions four and five, named section three, focus on parents' own reading engagement, while section four (questions six and seven) inquires about home reading resources and support. Section five (questions eight and nine) pertain to parents' educational background and section six (questions ten, eleven and twelve) are parents' perception of their own reading engagement. Section seven and the remaining questions pertain to parents' perception of their children's reading engagement and behaviour.

Student Attitudes and Skills Questionnaire. The student survey in the Full Study is a Student Attitudes and Skills Questionnaire (SASQ) and is focused on similar themes as the adult questionnaire. There are ten questions to which students respond using a three point likert scale with a smiley face representing "yes" a neutral face representing "sometimes" and a face with a frown representing "no". Questions one, three, eight, and nine focus on the student's self-perception and self-efficacy, questions four, six and ten pertain to reading involvement, and question two focuses on the location in which the student reads. Reading engagement is the focus for questions five and seven of the SASQ, particularly on the social aspects of reading. The Student Attitudes and Skills Questionnaire was created by myself as the researcher to include more student-friendly language and visuals (see Appendix F). The SASQ was distributed simultaneously to the students in the experimental and control classes. The teachers read the questions aloud to the entire class and any clarification with regard to the content of the questions was

provided. Students filled in their responses immediately after each question was read aloud and the entire questionnaire was reviewed as a class one last time after all questions had been completed.

Technology Usage Inventory. A Technology Usage Inventory (TUI) was administered to all of the students and their parents to gather data on the types of technology available to the student at home (if any) and the frequency of usage for educational and non-educational purposes. This information was helpful when integrating the iPad and integrated apps into the new multiliteracies program. Pre-existing technology surveys which addressed specific elements of technology use in the home or a parent's perception of their child's use lacked the focus on literacy and pedagogy which was the focus of my research. For instance, a national survey identified parent's perceptions of their child's technology usage in a general sense (Hart Research Associates, 2014), while a separate research institution inventory outlined fears parents have with their child's online usage (Jackson, Von Eye, Witt, Zhao, & Fitzgerald, 2011). Additionally, school surveys generally sought to ascertain parents' and students' positions towards technology needs in school in order to ensure that these needs were being met (South Pike County School District, 2014). In the Full Study, I was interested not only in the types of technology available at home but also students' technology usage and comfort level and, importantly, the use of technology for school-related tasks as opposed to entertainment. For these reasons, I created my own parent and student technology usage surveys for purposes of this study. The parent survey contains fifteen questions which uses a ten point likert scale (focusing on technology comfort levels and usage levels) and checkbox format. The parent survey focuses on types of technology available at home (one item), duration of time technology is used by the parent/child (two items), whether technology was used in their child's last classroom, and the types of technology used (two items). Questions also focus on self-perception and perception of their child's technology expertise (two items), uses for technology (four items), comfort levels of the parent and the child with technology (two items), technology engagement (one item), and purposefulness of technology in the classroom (one item). The student survey by comparison has ten questions on the same topics as the parent survey using the same format, likert scale, and questions as the parent survey. Some commonalities between the student and parent survey include the types of

technology (if any) located in the home, the frequency of use of these technologies for educational and personal use, and the use of these technologies specifically for literacy purposes (Appendix G). Unique questions on the parent survey focused on parental levels of comfort with technology, the parents' reasons for using technology, and how meaningful they felt technology was to current teaching methods in the classroom. Both parent and student surveys on reading motivation and technology usage were distributed and collected prior to the commencement of the experimental and control conditions.

The student TUI, like the SASQ, was completed in class with the same teacher-led approach in order to clarify any misunderstandings and address any unknown words for those in the class who struggled with reading. Like the AMRQ, the parent TUI was distributed during the Parent Information Night with the option to complete the survey at that time or send it back at a later date with their child.

Interviews. Interviews with each student and their parent(s) occurred at the end of the study during Weeks 31 and 32 (see Appendix H for both parent and student questions). All three teachers scheduled individual fifteen-minute interviews with each parent of the students in their class. The open-ended parent interview questions (Garn, Matthews & Jolly, 2010) pertained to what they knew about their child's literacy program, changes in their son's/daughter's reading ability since the beginning of the year to that point, differences in multimodalities since the beginning of the school year, changes in the texts their child read over the course of the year, their child's reading engagement and frequency at home since the start of the study, and frequency and consistency of technology usage at home for personal and educational purposes. The student interviews occurred during class time as the rest of the students worked on their literacy tasks. The teachers called individual students out into the hallway and asked each student questions that focused on the student's evaluation of the literacy program(s) in which they participated (both the CRLP and the IiLP), any improvement they experienced in their reading level, their comfort level with technology, and their use of technology for literacy tasks.

All interviews were video recorded and were further analyzed for verification of perceptions regarding the literacy program(s), reading development, and engagement, and were examined for similarities and differences with the original AMRQ/SASQ and TUI. To ensure the data collected

reflected the participant's considered perceptions, the questions were provided ahead of time to give participants time to think about and internalize the questions in order to ease any anxiety and provide the participants an open environment to offer honest and accurate perceptions. Further, the participants were assured that there was no evaluation or judgement placed on their answers and to be as upfront and direct with their responses. The audio portion of these video recordings was transcribed immediately after the completion of the interview sessions.

Curriculum Design Plan

The Full Study used the same components for curriculum design as a Pilot Study (see Chapter 3). Modifications were made in timing and implementation rather than in the content of the literacy programs. Before delving into the curriculum design plan, it is important to remember that 99% of the class were ELL (English Language Learners) students and spoke either Punjabi or Hindi as their primary language at home. Although it is not explicitly included as an aspect of the Pilot Study and Full study curriculum design, students would consistently communicate with their peers in the language they felt most appropriate to gain an understanding of the content and text; in many cases, this was their first language. This was so incidental and a natural inclusion of our everyday communicative practices that it is not explicitly documented in the planning or program but allowed for students to further understand the content, negotiate critical ideas, develop a deeper meaning of the topic, rationalize and justify their ideas and opinions and have authentic communicative experiences with their peers. Due to political restraints within the school, the students were required to produce their work in English, yet comprehensible input including visuals, audio, videos and other semotic modes supplementation, particularly in the IiLP, allowed for meaningful communication among peers. Because students acquire language which is slightly beyond their competence level, all students were provided opportunities on multiple levels to learn and grow (Council of Ministers of Education, 2013). If a student did not understand a concept and critical issue presented in English, students provided tutoring to one another in their home language. In the CRLP and IiLP, the learning environment was motivating, gave the students confidence, and allowed for reinforcement of the English language. In this learning environment, language became the vehicle for

delivering meaning and messages where the ELL students were not only increasing their reading and writing skills but their English Language skills as well.

Briefly, the Pilot Study began with a 4-week segmented rollout of CRLP components leading to full implementation in Week 5. Week 1 introduced the Norms of Collaboration as a kind of preparation for 3 weeks of CRLP training. The PM Benchmark Assessments were introduced in Week 2. The IiLP training was added in Week 9 followed by full implementation in Week 12. The gradual rollout of the literacy programs made sense for the Pilot Study but based on what I observed, I decided to make a few important modifications to the curriculum design plan for the Full Study.

For the Full Study, the introductory week was eliminated. Training occurred over 3 weeks and full implementation began in Week 4. In Week 1, I administered the PM Benchmark Assessments so that leveled groupings could begin immediately and students would know their independent reading level for the purpose of goal setting, reflection, and selection of appropriate text level. Also in the first week, I introduced all of the CRLP components at once. Based on my experience during the Pilot Study, I determined that holding back training until the second week and splitting up the program's components for a slow introduction were more of a hindrance than a help. Video footage from the Pilot Study training period showed that the students were both capable and ready to experience all of the components at once. The Full Study confirmed this finding: the accelerated training schedule allowed students to fine-tune their skills and increase both comfort and accuracy with each component with the help of teacher scaffolding and facilitation. It also gave students an extra week of CRLP full implementation and, based on observations and video review, the students in the Full Study appeared eager and far better prepared for the CRLP, likely due to having ample time to practice their literacy skills before full implementation.

Similar modifications were made in the Full Study for the introduction and implementation of the IiLP, and there were specific differences between the control and experimental groups. The control group participated in IiLP training and implementation but not until Week 20. This delay was necessary so that the experimental group and the control group could be compared and, in the initial conceptualization, the control group would not have participated in the IiLP for the duration of the study. The decision to begin

the IiLP training for the control group in Week 20 and full implementation in Week 23 came at the request of parents, who wanted their children to experience the same gains and opportunities as the students in the experimental groups. Fortunately, the extra 11 weeks of the IiLP allotted to the experimental groups were sufficient for comparison purposes. In both groups—control and experimental—there were 3 weeks of IiLP training before full implementation and all of the components were introduced at once. Both experimental groups followed the same schedule for PM Benchmarks Assessments, while the control group followed a separate schedule. The study can be divided into three phases. Phase 1 is considered August, September, and October or Months 1-3 of the Full Study and involved C, E1 and E2 all participating in the CRLP with no iPad integration. Phase 2 of the Full Study refers to November, January and February or Months 3-6 (data collection did not occur in December due to the extended break for winter holidays) and when E1 and E2 implemented the IiLP with iPad infused multiliteracies curriculum while C remained in the CRLP implementation stage with no integrated iPad curriculum. Lastly, Phase 3 of the Full Study pertains to March, April, May and June or Months 7-10 when C, E1 and E2 implemented the IiLP with iPads used as a meaningful tool with accompanying apps.

Data Analysis Procedures

The data analyses of this study are separated into two parts: descriptive and inferential statistics. Descriptive statistics are research processes used to "summarize, organize, and simplify data" (Gravetter & Wallnau, 2005, p. 6) as compared to inferential statistics, which entail methods that permit the researcher to formulate generalizations about a particular population (Gravetter & Wallnau, 2005).

PM Benchmark Assessment Scores Repeated Measures ANOVA Analysis

Based on pre-test baseline PM Benchmark Assessment scores and multiple testing period scores throughout the year, a repeated measures ANOVA was used to examine the effects of technology on reading achievement and comprehension using the CRLP and the IiLP as independent variables. The reading score means of the experimental groups and the control group were analyzed under three conditions in an effort to answer the three questions:

a) Do students' reading scores (skill development and comprehension level) improve with basic literacy instruction (CRLP) across groupings (all participants, months 1–3- Phase 1 of the Full Study)?

b) Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks across the full duration of the study (Phases 1, 2 and 3).

c) Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks for Phase 2 of the study (the CRLP and IiLP contrast period)?

The repeated measures ANOVA will be explained in more detail in Chapter Five when discussing the findings; however, for purposes of analysis procedure discussion, the repeated measures ANOVA was used to analyze the effect of the independent variable, program type (CRLP vs IiLP) on the dependent variable (PM Benchmark scores) in a month by month comparison of scores across the school year.

As recommended by Gravetter and Wallnau (2005), all analyses were conducted using the standard alpha level $\alpha = .05$.

I also chose to use a repeated measures ANOVA on the first question in Phase One of the study (August-October) only because it allowed me to measure the "significance of mean differences in situations where there were more than two sample means being compared" (Gravetter & Wallnau, 2005, p. 370). The three sample means compared in this study were those of two experimental groups and a control group.

To prepare the data for analysis, to answer the research question, "Were there significant differences between the Control Group (C), and the two Experimental Groups (E1 and E2) on composite scores of PM Benchmarks in Phase 1 (the CRLP for all group conditions) of the study? I transformed the multivariate (wide) data (where each row represented a participant and each column represented a variable) into univariate (long) format in which each row presented a specific time point rather than a participant. The reason for this transformation in data format was because in the multivariate format data, each time measure is a variable. For this study, the time variable was each month the PM Benchmark Assessments were performed. Alternatively, specific time observations are represented in each row of the univariate data while multiple rows of observations could designate each individual. This format is useful

because it yields results that are particular to the class and not the individual student, which is important in order to answer the research questions.

As explained, a repeated measures ANOVA was performed in SPSS to attempt to answer the first question. The dependent variable was reading scores while the independent variable was unit of time (in months). An average composite score of all participants' three reading scores from the first 3 months of school (August, September, and October) per class (C, E1, and E2) was used in this analysis where the fixed effect was time. E1 and E2 were separated for the repeated measures ANOVA for the purposes of keeping each classes results separate. The results of this analysis is presented in Chapter Five.

A repeated measures ANOVA analysis was also performed in SPSS to answer the second question and the second phase of the study: Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks across the full duration of the study (Phases 1, 2 and 3). The dependent variable was PM Benchmarks composite reading scores while the independent variables were unit of time and Curriculum (CRLP or IiLP). All participants' reading scores were averaged monthly within each condition (CRLP- Control Group, IiLP- Experimental Group 1, IiLP-Experimental Group 2) across an entire school year (August–June) and then analyzed with the intent to compare reading scores between classes. The fixed effects within this analysis were time, Curriculum (represented by iPad), and the interaction between Curriculum and time. These results are presented in Chapter Five.

A mixed model repeated measures ANOVA was performed in SPSS to attempt to answer the third question: Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks for Phase 2 of the study (the CRLP and IiLP contrast period)? The dependent variable was reading scores while the independent variables were unit of time and presence of the iPads. The difference between analysis three and analysis two is that the focus in analysis three was on teaching months 4–6 (excluding December), when the experimental groups received iPads but the control group did not. The fixed effects within this analysis are time, Curriculum, and the interaction between Curriculum (control vs. experimental) and time.

Analysis for the AMRQ/SASQ and the TUI

The AMRQ/SASQ and the TUI were used to answer two questions:

a) Prior to the onset of the CRLP and IiLP curricula, for C, E 1 and E2 were there differences between parent and student perceptions of student engagement and student ability as measured by adaptations of the AMRQ and the SASQ?

b) Prior to the onset of the CRLP and IiLP curricula, for C, E 1 and E2 were there differences between parent and student perceptions of student technology use and student comfort with technology as measured by adaptations of the TUI?

Questions in the surveys were numerically coded on a three-point scale so that data could be simplified for comparison. As illustrated in Table 8, responses to questions that indicated low engagement, motivation or ability were coded as "1" whereas responses to questions that indicated high engagement, motivation or ability were coded as "3."

Bernard and Bernard (2012) maintain that "analysis is the search for patterns in data and for ideas that help explain why those patterns are there in the first place" (p. 452). Coding the questions made the data more manageable and enabled me to highlight patterns within and between the surveys (See Table 8).

Table 8

Coding Guide to the Adapted Motivation to Read Questionnaire

Sample Responses	Scoring Guide
Never/hardly ever, strongly disagree, less than an hour a week, Not enthusiastic, Struggling reader, No	1
Once or twice a month, Sisagree, 1-5 hours a week, Somewhat enthusiastic, Good reader, Yes	2
Everyday/almost everyday, Strongly agree/agree, 6-10 or more than 10 hours a week, Highly enthusiastic/enthusiastic, Great/excellent reader	3

As presented in Table 8, categorical referents were clustered and simplified into three numerical categories. The scores for questions dealing with *perceived reading engagement*[28] and *perceived ability*[29] examined the relationships that existed between the parent's perception of their child's reading engagement and ability and their child's perception of themselves.

The AMRQs for parents and the SASQ students were tabulated based on frequency counts for each of the categories using the engagement variable, which measured the level (using a scale of low, medium, or high) at which a student perceived self-engagement with reading or a parent perceived their child's level of reading engagement, pleasure, and motivation to read (Appendix F). I then compared the frequency counts for C, E1 and E2. These frequency counts were converted to percentages to account for the different number of students in each class. Table 9 shows a summary of frequency counts and percentages for each of C, E1, and E2 for Perceived Engagement and Perceived Ability.

[28] Perceived reading engagement- Parent Survey (Questions 4, 5, 11, 12, 13, 14) Student Survey (Questions 1, 2, 4, 5, 6, 7, 8, 10)

[29] Perceived reading ability- Parent Survey (Question 15) Student Survey (Questions 3, 9)

Table 9

Summary of Frequency Counts and Percentages for Each of C, E1 E2 Based on Parent and Student Pre-Study AMRQ/SASQ Responses for Perceived Engagement and Ability

Class	Coded Categories used for Engagement Perception Scores	Number and Percentages of Students/Parents Whose Scores Fell Into Specific Engagement Categories Based on AMRQ Outcomes		Coded Categories Used for Ability Perception Scores	Number and Percentages of Students/Parents Whose Scores Fell Into Specific Ability Categories Based on AMRQ Outcomes	
E1		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	12 (60%)	13 (65%)	Score 1- Below	15 (75%)	15 (75%)
	Score 2- Medium	5 (25%)	4 (20%)	Score 2- At Level	3 (15%)	3 (15%)
	Score 3- High	3 (15%)	3 (15%)	Score 3- Above	2 (10%)	2 (10%)
E2		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	6 (33%)	6 (33%)	Score 1- Below	7 (39%)	7 (39%)
	Score 2- Medium	3 (17%)	3 (17%)	Score 2- At Level	6 (33%)	5 (28%)
	Score 3- High	9 (50%)	9 (50%)	Score 3- Above	5 (28%)	6 (33%)
C		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	10 (50%)	11 (55%)	Score 1- Below	11 (55%)	11 (55%)
	Score 2- Medium	5 (25%)	3 (15%)	Score 3- At Level	6 (30%)	6 (30%)
	Score 3- High	5 (25%)	6 (30%)	Score 4- Above	3 (15%)	3 (15%)

As with the AMRQ and SASQ, I quantified the data presented from the TUI according to a number of themes that I developed using numerical labels for categorical data. The frequency of technology usage according to varying wording used for questions is shown in Table 10.

Table 10

Coding Guide to Technology Usage Inventory

Sample Responses	Scoring Guide
Never, No, Not confident, Not comfortable, Not fun, 1 Day a Week	1/Low
2-5 Days a Week	2/Medium
Every day, Very confident, Very comfortable, Very fun	3/High

Table 10 identifies the typical answers available on the survey and assigns a numerical label to that question. I grouped survey responses into thematic categories of *perceptions* of *technology usage* (Questions 1-5, 8-11 and 15 on the TUI) and *perceptions of comfort level* (Questions 6, 7, and 12-14 on the TUI) for both parents and students. I tabulated frequency counts for each of the categories of technology usage and comfort level with technology from the TUI for parent and student and compared C, E1 and E2 on these frequency counts. I then converted the frequency counts to percentages to account

for the different number of students in each class. A summary of frequency counts and percentages for each of C, E1 and E2 for the categories, technology usage and comfort levels with technology, is shown in Table 11.

Table 11

Summary of Frequency Counts and Percentages for Each of C, E1 E2 Based on Parent and Student Pre-Study TUI Responses for Technology Usage

Class	**Coded Categories used for Technology Usage Scores**	**Number and Percentages of Students/Parents Whose Scores Fell Into Specific Engagement Categories Based on AMRQ Outcomes**		**Coded Categories Used for Comfort Levels with Technology Scores**	**Number and Percentages of Students/Parents Whose Scores Fell Into Specific Ability Categories Based on AMRQ Outcomes**	
E1		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	4 (20%)	4 (20%)	Score 1- Low	4 (20%)	4 (20%)
	Score 2- Medium	4 (20%)	4 (20%)	Score 2- Medium	4 (20%)	4 (20%)
	Score 3- High	12 (60%)	12 (60%)	Score 3- High	12 (60%)	12 (60%)
E2		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	8 (44%)	8 (44%)	Score 1- Low	8 (44%)	8 (44%)
	Score 2- Medium	2 (12%)	2 (12%)	Score 2- Medium	3 (17%)	3 (17%)
	Score 3- High	8 (44%)	8 (44%)	Score 3- High	7 (39%)	7 (39%)
C		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	10 (50%)	10 (50%)	Score 1- Low	10 (50%)	10 (50%)
	Score 2- Medium	3 (5%)	3 (5%)	Score 3- Medium	3 (15%)	3 (15%)
	Score 3- High	7 (35%)	7 (35%)	Score 4- High	7 (35%)	7 (35%)

Focused Observations, Anecdotal Notes and Interviews

Focused observations, anecdotal notes and interviews were analyzed in order to answer the following questions:

a) Were there differences between C, E 1 and E2 in reading strategy use as indicated in observations of Guided Reading sessions, student Vlogs, and parent interviews?

b) Were there differences between C, E1, and E2 in engagement (as indicated by participant behaviour and embodiment) and articulations of pleasure in monthly randomly selected video observations?

c) Were there differences between C, E1, and E2 in time on task and off task behaviours in monthly randomly selected video observations?

d) Were there differences between C, E1, and E2 in Norms of Collaboration demonstrated in monthly randomly selected video observations?

e) Were there differences between C, E1, and E2 on critical thinking skills as demonstrated by student products?

I reviewed the observational and anecdotal notes and the class video footage following basic grounded theory (Heath & Cowley, 2004), until core categories began to emerge. I selected these core categories to become the "look fors" within the focused observations (i.e., Verbal and Non-Verbal Cues, Thinking Skills, Norms of Collaboration). The open coding system allowed me to analyze the transcribed videos and student and parent interviews until more core categories emerged. New categories named: Reading Behaviours, Types of Text, Technology Fluency, Technology Advocacy, Multimodalities, and Multiliteracies. Included in the data analyzed in this way were written memos also recorded by all of the teachers throughout the CRLP and the IiLP processes.

The finalized categories that emerged were divided into three principal categories with a number of subcategories. The first main category was *Achievement*, which included identified observations of reading skill, comprehension development, observable thinking skill development, and reading strategy development. The second main category was *Affect*, which included engagement, involvement, demonstration of motivation and pleasure with reading and reading/writing related tasks, choice control, and technology affordances. The final main category was *Collaboration and Learning*, which included collaboration and types of dialogue and communication.

The final categories and subcategories that materialized for the student interviews were *Articulation of Pleasure* (pleasure and engagement, and the motivation to read both in the classroom and outside the classroom context using multimodal means); *Reading Achievement* (reading skill, reading comprehension, and reading strategy development); *Comfort Level and Usage of Technology* (technological fluency, exposure, usage outside of school, and access); and *Goals and Visions* (students' self-initiated plans for future reading development, the continued use of technology for literacy purposes, and the use of current skills and key learning as a means to teach others).

The parent interviews demonstrated the same main categories and subcategories as the student categories with a slight modification of the category *Articulation of Pleasure* in that the responses came

from the parent's perception of their child as opposed to the child's perception of himself/herself. Similarly, the final main category of *Goals and Visions* related to the parent's goals for their child.

With the development of the final main and subcategories, I was able to complete my frequency counts according to the codes by tallying every occurrence of the observable element. Within the anecdotal notes, I included a very detailed account of the verbal utterance, non-verbal behaviours, strategies and experiences (and in the case of the interviews, stories told or examples given), all the while identifying the context within which this data was observed.

In the sections to follow, I detail the procedures for each element mentioned above.

Data Analysis of Guided Reading Sessions: Frequency Counts

Frequency counts were taken during all Guided Reading sessions using a Frequency Tracking Chart that focused on decoding and comprehension strategy usage, discussion, and reflection on such strategies from all participants within all three classes. Every time a strategy was used, it was recorded on the frequency chart with accompanying anecdotal notes. Student Vlogs and parent interviews were also used to assess the extent to which decoding and comprehension reading strategies increased when using the iPads as a tool combined with a multiliteracies curriculum, carefully designed critical literacy activities, and meaningful apps .

Decoding strategies used when a student came across an unknown word observed were getting your mouth ready for the word, chunking it out, sliding through the word, using alternate vowel and consonant sounds, skip the word and re-read, see if the word makes sense in context, look at the pictures, and spell it out (Hudson, 2007) and comprehension strategies used to gain meaning from a text and ensure understanding consisted of inferring, making connections, visualization, determining the importance, synthesizing, asking questions to understand, and making predictions (Hudson, 2007). Guided Reading sessions were planned to work on a particular reading strategy. Student reflections in the CRLP and Vlogs in the IiLP were reviewed with the intent of investigating the extent to which students referred to and reflected on a reading strategy in each of the programs.

In each instance that a student used a decoding or comprehension strategy, it was tracked on the frequency chart as a tally under the associated heading. If the strategy was obvious in its usage (i.e., decoding using chunking or trying alternate vowel sounds to figure out an unknown word) a simple tally was recorded. If the reading strategy was discussed or a student reflected on its usage, anecdotal notes would accompany the strategy for purposes of clarification and discussion.

Parent interviews were also examined for evidence of student reading behaviours. The more often a parent discussed the reading program or the reading behaviours they noticed in their child at home, the more likely it was that their child was using these reading behaviours at school and consequently transferring behaviours to home reading situations.

Data Analysis of Recorded Video Footage

Engagement as observed in recorded video sessions was coded and analyzed based on two preliminary categories that were clustered together as indicators of reading engagement: involvement and articulation of pleasure. Involvement included observable participatory behaviours and embodiment[30] in literacy tasks and activities, including an analysis of the student's body language (both overt positive and negative body language) and the time a student remained on task. I examined on-task and off-task behavior to draw conclusions about student engagement in literacy tasks. Articulation of pleasure was the next indicator of student engagement, and it included verbal vocalizations and articulations of pleasure on a particular literacy task.

[30]Embodiment: identify the role of the body and how it is used to analyze the places and facets of learning in relation to mobile devices (Ehret & Hollett, 2013). For instance, when students were involved in the IiLP, they did so as "embodied subjects whose identities were shaped by the cultures in which they were situated, the circumstances of their lived experiences, and the particularities of their dispositions, abilities, and interests" (Beavis, 2012 p. 57). The students expressed emotion through their body, which is considered as a representation and a looking glass into the mind (Perry, 2010). It is through the examination of embodiment in the discussion of "affect" findings that one comes to recognize the importance of the representation and expression of ideas, qualities, and feelings in relation to literacy and how the iPad within the IiLP allowed for the potential for students to remake place as mediated by interconnected digital technologies. Complementary to the role embodiment plays on affect in critically engaging the learner, mobilizing emotion as mediated action shows how using language with respect to social players and learning goals permits emotion to function as action (Zembylas & Schutz, 2016) as demonstrated within this Full Study.

Data Analysis Procedures for the Recorded Video Footage

Digital video footage was imported into a software program called Wondershare Filmora[31] which enabled me to zoom in on a particular group of students or individual student. This software included many editing tools such as an audio enhancer for me to listen more closely to individual conversations and focus specifically on articulations of pleasure. In instances where conversations were inaudible and the Wondershare Filmora software was not useful in enhancing sound quality. I used Nero Wave Editor[32] and Virtualdub[33] to further enhance the sound quality. One randomly selected video each week for each of the three classes was transcribed in full for purposes of exploring articulations of pleasure.

Systematic interval time sampling (Radley, Dart, & O'Handley, 2016)[34] was used because it is easy to implement and is a means to reduce the data. Further, systematic interval sampling gives a sense of control to the researcher and offers a low risk factor of contaminating data. The researcher can feel confident in the interpretation of the data (Ross, 2015).

Among the disadvantages of systematic interval sampling are that the size and frequency of the interval selected can affect what is represented. I accounted for this disadvantage by using a small interval. Another disadvantage is having an interval sample system which enhances the probability of a particular outcome (perhaps by the selection of the interval or the frequency of the sampling) (Ross, 2015). The frequency and size of my sampling helped me overcome these issues. Finally, using an informal comparison, I had the other researchers participating in tracking videos to ensure there was consistency across outcomes.

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[31] Wondershare Fimora is a video editor that includes a variety of different editing features such as sound magnification to hear certain sections of video on an amplified scale.
[32] Nero Wave Editor is video editing software which includes an amplification and magnification feature to increase individual volume levels of people in the video
[33] Virtualdub is identical to Nero Wave Editor and includes video editing features including sound amplification
[34] Momentary Interval Time Sampling was a method entailed in the Full Study separating the observational period (80 minutes) using the same video footage used for analyzing positive and negative body language, into equal one-minute time intervals and logging what the student was doing at each one-minute interval. Engaged time behaviours were measured and then coded using one of the following four categories: on-task (O), passively off-task (P), verbally off-task (V), or actively off-task (A) (Wood, Zivcakova, Gentile, Archer, De Pasquale, & Nosko, 2012). Frequency counts for these categories of behaviours were averaged for the class for that given observed time period.

Each interval was examined in order to provide an estimate of on-task and off-task behaviour. Examples of off-task behaviours, included student communication and collaboration off-topic, milling about the classroom, or collaborating with group members outside of one's literacy center group about tasks other than these assigned or designated for the time period.

Time-on-task: Off task, pleasure and engagement. In this section, time-on-task will address three elements: on/off task behaviour, pleasure and engagement. Time-on-task, referred to as engaged time, is learning time (Berliner, 1990) that is not just the act of engaging one's time on a task but also the cognitive and emotional commitment needed to effectively complete a task whether that task is writing, reading, or inquiring about content (VanDeWeghe, 2009). Ultimately, time-on-task establishes that students are focused, engaged, and engrossed in the learning task (Greenwood, Horton, & Utley, 2002) and time-on-task behaviours are directly linked to positive and negative body language, including verbal expressions. I have used three categories to talk about off-task behaviour: passively off task, verbally off-task and actively off-task. Passively off-task demonstrations depicted the students who were sitting at their desk but their behaviour demonstrated that they were not involved in their task (i.e., negative body language behaviours). Verbally off-task was the label given to those students who participated in the literacy task yet were speaking about anything but the task (i.e., what they had for lunch, the winter break that was coming up, a soccer game that they played). Finally, actively off-task behaviour denotes students who were verbally and behaviourally not engaged in the literacy task. These students were walking around, distracted by other children, not working on their task, and talking about other things besides the literacy task.

Based on the parent and student interview responses, indicators of pleasure and engagement were clustered and students were categorized as exhibiting either low, medium, or high pleasure and engagement levels with literacy tasks.

For explanatory purposes, pleasure was used to describe the feeling associated with students' literacy behaviours and task completion (i.e., joy and happiness), whereas engagement was involvement in literacy behaviours and literacy tasks. Both pleasure and engagement are indicative of well-being and

associated with a student's literacy success (Schueller & Seligman, 2009). The more a student experiences pleasure in reading, the more often the student will be engaged in the task of reading; the higher the level of engagement in a literacy task, the greater the experience of pleasure a student will have. It was important for me to consider this relationship between engagement and pleasure, which is why I decided not to collapse these components into one category but rather kept them separate to track a student's articulation of pleasure in a task as a distinct entity from a student's articulation of engagement in a task.

In video recorded interviews and class observations, every time a student or parent articulated pleasure in a literacy task or with a literacy behaviour based on recorded interviews, a tally was given to that particular behaviour. Similarly, every time a student or parent articulated the student demonstrating literacy engagement, a tally was given for engagement. These tallies were tabulated for each student/parent unit and clustered so comparisons could be made between C, E1 and E2. These tabulated frequencies are presented as averages where a student is given a label of high, medium, or low level of engagement and a high, medium, or low level of articulation of pleasure.

Class library and iPad App book circulation data. Although I did not make a hypothesis about out-of-class engagement levels, as I analyzed my data I realized that I had one ready source providing some information about student reading engagement outside of class time. I reviewed my monthly class library sign-out sheets which are collected Grade 2 teachers as a matter of routine. I and the other two classroom teachers tracked the number of books students read in a month on Raz-Kids[35] and Tumble Books[36] based on the teacher-login feature and the weekly reading logbook completed by parents. Simple frequency counts were made for each of the classes in the study. Though book sign-out increased, this circulation data are not necessarily a guarantee that texts were read.

[35] Raz-Kids is an online site and app that offers leveled books from a variety of genres and topics. It allows for individualized reading and activities for students.
[36] Tumblebooks are digital animated, talking picture books that are taken from existing picture books, where you can add sound, animation, sound effects, music, and narration to create your own e-book.

Collaboration. Norms of Collaboration were used to determine the level and types of collaboration that were utilized and applied within each literacy context. Tracking these norms during group tasks was not an expectation within the school; however, it became a key component of this study. For the purpose of this study, I needed to document norms usage in all three Grade two classrooms, so as to track any differences between literacy contexts and between classrooms. I analyzed randomly selected video footage from work periods each month and created a checklist using the categories of the Norms of Collaboration. Whenever a student demonstrated a particular collaborative behaviour, a tally was added to that column under the associated norm. Collaborative behaviours were totaled and averaged throughout the duration of both literacy programs for all three classes to use for comparative purposes. As well, each randomly selected monthly video-recorded session was transcribed and these transcriptions were used to isolate examples of specific collaborative behaviours to use as supporting evidence for the collected tallied data.

Conclusion

Several key modifications were made to the Full Study based on my experience with the Pilot Study. For ease of presentation, the following chapters are framed by the three core categories derived from the observational data provided.

- *Achievement* (Chapter 5) focuses on student reading achievement.
- *Affect* (Chapter 6) looks at the attitudes and feelings of students and parents with respect to reading engagement and motivation, and pleasure in participating in the reading activities.
- *Collaboration and Learning* (Chapter 7*)* focuses on the interrelation of social factors (collaboration and communication) and critical thinking.

CHAPTER 5

ACHIEVEMENT—FINDINGS AND DISCUSSION

One goal of this study was to determine if Grade 2 readers would perform better academically using technology as part of their regular literacy program as opposed to the standard literacy program that does not include technology. A key marker for assessing the impact of technology was reading achievement, which I measured in two ways. The first was the reading levels achieved based on skill and comprehension, tracked through the monthly PM Benchmark Reading Assessments. The second marker was the use of reading strategies, particularly decoding and comprehension strategies as measured by frequency counts from all CRLP and IiLP Guided Reading sessions. Both indicators of reading achievement allowed for conclusions to be made about the effectiveness of IiLP compared with the CRLP.

Achievement as Measured by Composite PM Benchmark Scores

To answer the question, "Were there significant differences between the Control Group (C), and Experimental Group (E1) and Experimental Group (E2) on composite scores of PM Benchmarks in Phase 1 (the CRLP for all groups—months 1-3) of the study? a repeated measures ANOVA was conducted. The results of that test are reported in Table 12.

Table 12

Estimates of Fixed Effects for Research Question 1 Using a Repeated Measures ANOVA Test

						95% Confidence Interval	
Parameter	Estimate	Std. Error	df	t	Sig.	Lower Bound	Upper Bound
Intercept	12.473684	.667172	114.000	18.696	.000	11.152022	13.795346
Months	.412281	.477189	119.928	.864	.389	-.532526	1.357088

a. Dependent Variable: Reading score.

The results indicate that there were no significant differences on average between or within the groups during this baseline period, b= .412, t (119.93) = .864, p= .389. These findings tell us that while all of the students from the three classes were participating in the CRLP, reading levels did not differ significantly over the first 3-month period either between the classes or between the onset of Phase 1 of the study and the onset of Phase 2 of the study.

Analysis One: Effects of CRLP on Reading Scores

The CRLP did not account for significant reading achievement in Grade 2 students. This was somewhat unexpected as I anticipated that students would achieve reading skill and comprehension gains over the 3-month period in the CRLP. This pattern might reflect general slowness in acculturating to the classroom environment. It could have to do with the possibility that reading is a skill that does not grow linearly but plateaus and then shifts and therefore would not be captured by the measurement. As well, the lack of significance in reading scores throughout the three-month period where C, E1 and E2 all participated in the CRLP could have to do with the fact that PM Benchmarks is not sensitive to earlier levels of reading.

As there was a fair amount of similarity within and between groups I could make inferences about the impact of the IiLP with greater confidence.

Analysis Two. Effects of IiLP versus CRLP on Reading Scores

The next analysis focused on the question: "Were there significant differences between C, E1 and E2 on composite scores of PM Benchmarks across the full duration of the study (Phases 1, 2, and 3)?" I used a repeated measures ANOVA to test this question. The results of that analysis are presented in Table 13.

Table 13

Fixed Effects of iPad Presence on Reading Achievement Across Classes Using a Repeated Measures ANOVA Test

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	7.438226	.982216	60.049	7.573	.000	5.473533	9.402918
[iPad=.00]	4.632838	.197835	444.191	23.418	.000	4.244029	5.021647
[iPad=1.00]	0[b]	0	.	.	.	.	.
Months	1.581344	.054770	74.176	28.873	.000	1.472217	1.690471
[iPad=.00] *Months	-.941761	.041069	444.005	-22.931	.000	-1.022474	-.861048
[iPad=1.00] *Months	0[b]	0	.	.	.	.	.

a. Dependent Variable: Reading score.
b. This parameter is set to zero because it is a redundant.

Results indicate that there was a significant interaction between curriculum and time (b= -.942, t (444.01) = -22.93, $p < .001$). When the students participated in the IiLP program, their reading scores

were .942 reading levels higher per month than students reading levels who were in the CRLP. In other words, students within the IiLP context increased almost one reading level[37] more on average per month than students in the CRLP context. Results are shown in Figure 8.

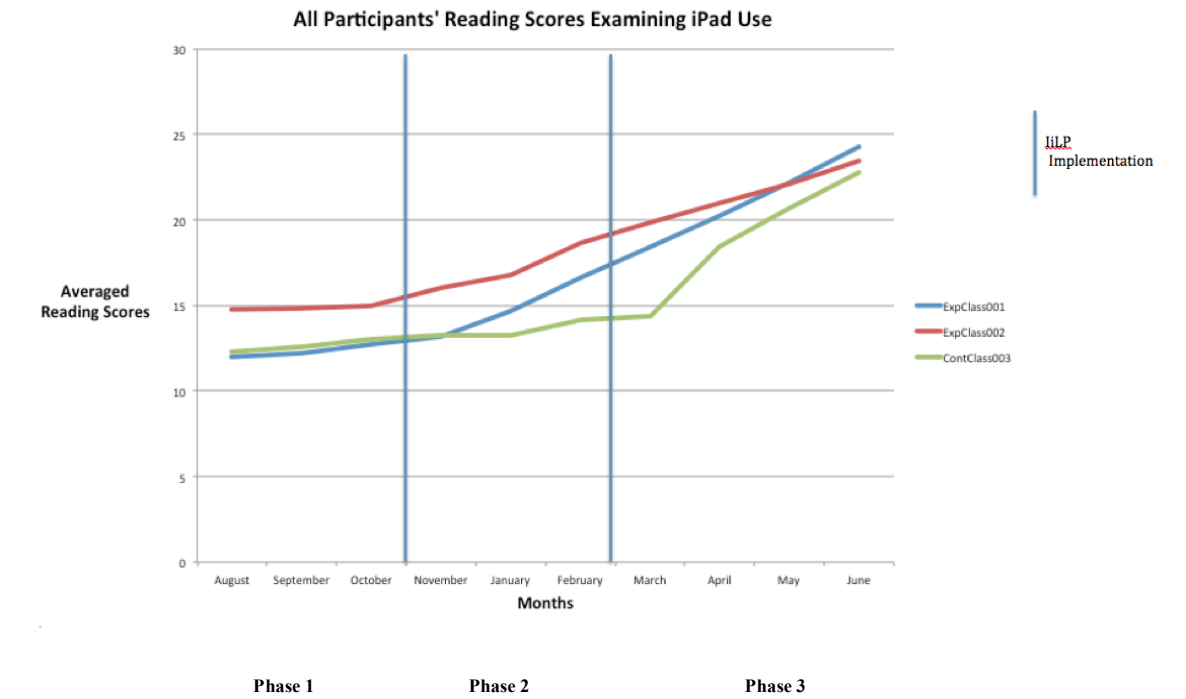

Figure 8. Increase in Reading Scores for IiLP Participants as Compared to CRLP Participants

Findings from the repeated measures ANOVA show that students in the IiLP outperformed students in the CRLP in reading skill and comprehension development based on five PM Benchmark Reading Assessment scores. As Figure 8 indicates, all three classes regardless of grouping (experimental or control) show no significant reading gains within the first 3 months of school. In contrast, during the second 3-month period and Phase 2 of the Full Study (November, January, and February), when the IiLP was implemented in Experimental Class 001 (blue) and Experimental Class 002 (red), reading skills and reading comprehension scores increased considerably and steadily for the experimental groups but not for the Control Class (green) who were enrolled in CRLP. Interestingly, when the IiLP was implemented in the Control Classroom in March (Phase 3 of the Full Study), reading skills and reading comprehension

[37] One reading level indicates a PM Benchmark reading level (i.e., 16 to 17) and does not indicate a grade level.

continued to increase for the experimental groups and began to increase for the control group to the point where scores for the three classes nearly intersected by the end of the year (see Figure 8, March–June). These results suggest a link between the IiLP program and reading gains.

There are many possible explanations for the IiLP program and reading achievement:

- increased reading engagement and motivation to read among students in the IiLP context
- enhanced critical/creative thinking skills due to multimodalities and multiliteracies
- greater likelihood for interactive student-centered learning prospects
- increased opportunities for collaboration (not just within the class but also with global communities)
- increased possibilities for instant descriptive and oral feedback from apps, the tools afforded by the presence of the iPad and from peers, teachers, and the global community
- instant accommodations of differences and differentiation of levels and tasks within the integrated iPad multiliteracies context
- the chance for students to interchange roles between student and educator
- consistent opportunity for students to practice learned and discovered literacy strategies through meaningful experiences.

In the next section, I will consider each of these possibilities and provide a better sense of why the inclusion of the integrated iPad into daily literacy instruction yielded such results.

Increased reading engagement and motivation to read. A general observation consistent with most iPad integration studies is increased student engagement and motivation as a result of the use of an iPad (Apple, 2014; Gajowski, 2016; Mango, 2015; Manuguerra & Petocz, 2011). From the onset of the implementation of the IiLP, the students' excitement about using iPads was apparent through student conversation (to be discussed later) and vocalizations. I believe this excitement was initially because the iPads were a novelty, something the students were passionate about exploring and discovering. With any novelty, the excitement typically diminishes over time; however, that was not the case with this study.

Students cheered and became overtly excited when the iPads were distributed at the commencement of the IiLP session, and this energy continued to the end of the year. At almost any given moment, one could observe this engagement and motivation through student involvement in literacy tasks. Students frequently extended iPad multiliteracy projects beyond the classroom. In the school, this took the form of a self-initiated integrated iPad club in which Grade 2 students led other students from Grades 1–5 through literacy tasks, activities, assignments, and projects we had done in class. At home, engagement took the form of extending class projects through blogging, creating infographics to follow up with assignments, and designing and producing videos responding to ideas from texts read in class. All of this was self-initiated. There are many other examples of identifiable student engagement and indicators of motivation during the IiLP that will be discussed in the next chapter in more detail; however, for the purposes of this discussion, it is important to acknowledge the enhanced student engagement and motivation resulting from the inclusion of the integrated iPad and purposeful selection and use apps and online programs through the infusion of a critically designed multiliteracies curriculum in the IiLP curriculum, in theory are associated with gains in reading levels among students in the IiLP. As identified by Wigfield and Guthrie (2000), reading achievement is directly associated with reading engagement. The more engaged and motivated a student is to read, the more often they will read, interact with other engaged students about texts, and develop their reading strategies, in turn making them even better readers. Further, interaction with multiple literacy methods encourages students to be navigators of their own literacy learning and critical understanding, affording students increased incentive to engage learning practices (Cope & Kalantzis, 2000).

Enhanced critical/creative-thinking skills due to multiliteracies. The multiliteracy/multimodality framework promotes critical and creative thinking as a way to augment student communicative competence (McKeeman & Oviedo, 2013). Students in the IiLP offered purposeful and reflective judgments about critical issues (e.g., social inequalities, women in sports) in their responses throughout the IiLP activities and in the PM Benchmark Reading Assessment comprehension answers. All of Cope and Kalantzis (2015)'s named pedagogical moves (Experiencing,

Conceptualizing, Analyzing, and Applying were employed resulting in the development of critical and creative thinking skills in IiLP participants. Within this context, students discerned the meaning and importance of experiences while drawing upon diverse types of texts (as will be discussed in the following sections). Students discussed, posed questions, took risks, experimented, and shared ideas in a collaborative manner, all of which are definitively linked to literacy skill development and reading achievement (Graves, et al. 1998; Kuhn, 1999; Yang & Wu, 2012). Moreover, taking a thoughtful and purposeful critical position is as essential to multimodalities and multiliteracies as it is to the evaluation of traditional texts because it embodies critical and creative thinking skills (Dole, et al. 1991). The association between the development of critical thinking skills (through a multiliteracies/multimodalities framework in the IiLP) and reading skill development was likely supported by the addition of technology such as the iPad, which may also have helped to foster critical and creative thinking skills in elementary students.

Interactive, student-centered literacy learning. As evident in the design of the IiLP, all of its five components (Read, Record, Reflect; Strategy Identify; Writing Workshop; Word Work; and Guided Reading) were conceived using multiliteracies and multimodalities pedagogy as their foundation. In doing so, the program adopted an inquiry-based, student-centered learning framework that allowed students to be actively involved in the literacy processes. Students were given choices in activities, apps, interfaces, modalities, texts, and topics. Within a student-centered learning environment, engagement is created through literacy activities including reading, writing, conversing, collaborating, and reflecting as they actively connect to knowledge (McCombs & Whistler, 1997). Furthermore, within this environment, students regularly collaborate in such a way that learning is visible and accountable. It is in this learning context that students are said to develop key decoding and comprehension strategies to propel reading development forward (Taylor, Pressley, & Pearson, 2002). As well, a student-centered framework for literacy programs empowers students (McCombs & Miller, 2007) by allowing for choice in their learning, in turn increasing engagement in the task and leading to positive educational benefits, including increased reading achievement (Chall, 2000) whereby students are experiencing the known and the new from

varying viewpoints (Cope & Kalantzis, 2015). Although many components are involved in a student-centered learning environment, the IiLP exemplifies this type of framework and as such, this could be another contributing factor to student reading achievement when in the IiLP context.

Collaborative opportunities. When working in the IiLP context, students were consistently asking each other questions, sharing their content and work on their iPads with their peers, seeking online feedback from peers or other bloggers around the world, and providing assistance to one another when encountering technical issues. If students were learning an app, they would troubleshoot together and discover as a dyad, triad, or small group many multimodal and digital features. The use of the iPad as a tool joined with well-designed multiliteracies activities (see Appendix B) created more collaboration than when students were in the CRLP even though in the CRLP students were encouraged to talk and engage in critical discourse. Therefore, the increase in collaboration when working with the IiLP curriculum may have been a factor contributing to the increase in reading scores for IiLP students compared with CRLP students.

Increased opportunities for feedback. A potential contributing factor to increased reading scores from the IiLP curriculum that I had not anticipated was the instant feedback students received from apps or social media platforms on the iPad. Whenever students responded to a text using a particular app, formulated critical questions pertaining to a social justice issue that they read, blogged about their work or ideas, created a Tellagami, iMovie,[38] or PicCollage,[39] or simply participated in the Read, Record, Reflect component of the IiLP, they received consistent oral and written descriptive feedback. The collaborative sharing experiences that were discussed above allowed students to check for understanding and negotiate their thinking with their peers, teacher, and the world. Take, for instance, the Read, Record, Reflect component: students began by reading to themselves using known strategies with a particular focus on fluency and expression. When a student felt that they had met the set criteria with regard to their reading,

[38] iMovie is a video editing software which allows you to record and edit personal and professional videos with a multitude of features and functions.
[39] PicCollage is an app that allows you to edit and create collages with your pictures.

they read the same text to their peer to receive feedback on their literacy skills. If the feedback given identified that standards had been met, the peer then recorded the student reading aloud using the iPad as a digital and multimodal tool. Finally, both students watched the recorded version of the student reading the text to identify which reading strategies were being used, what the student did well, what improvements needed to be made, and their next steps as a reader. At this stage, students also participated in critical discussions about the text with their peer, asked probing questions, sorted through misunderstandings, identified main ideas, and made inferences and connections to the text. In this collaborative task, the reader was receiving instant oral feedback on their reading and understanding of the text on several occasions, leading to reflection and, in turn, implementation of suggested reading strategies/skills based on peer feedback, which may have contributed to improved reading skill and comprehension.

Students also received informal instant descriptive feedback. For example, students consistently discussed their ideas and showed their work to peers, seeking approval and advice/suggestions on their work, negotiating ideas, and clarifying their own understanding of the text. This informal feedback allowed the student to rework their piece and, through social practice, obtain the mastery that they needed to develop successful literacy skills (Baynham, 1995). Once a student had completed a task, they would often upload their product or thinking to KidBlog or QuadBlogging,[40] which was the gateway to global feedback. People from around the world (Australia, New Zealand, Embassy schools in Africa and Asia, North America, and parts of South America) would respond to the blogs created by students. Feedback included, for example, comments of approval, suggestions on how to improve the blog, and comparative analyses from the bloggers' perspectives. Students received this feedback daily, allowing them to revisit their products, advance their thinking, make connections, and develop or fine-tune their literacy strategies. Students were becoming active agents of conceptual formation allowing for the interpretation

[40] QuadBlogging has four schools blogging in a cycle that helps people view and comment on student blogs. The way this works is, once a class/user signs up they get entered into a "quad" and then a moderator makes sure things run smoothly.

of the design elements to verify meaning and encourage the pursuit of the next pedagogical move (Cope & Kalantzis, 2015). As a result, the participants used this feedback to interpret the cause and effect structures, functions, and relationships between reading and writing. Students were reading and writing far more often than when engaged in the CRLP, and their reading skills and comprehension levels improved much more with the IiLP.

Finally, as a requirement of the IiLP, students were responsible for uploading any work that they had completed during the literacy session as well as their final Vlog to Edmodo and a private YouTube channel. Aside from the accountability factor in submitting their work daily, students received timely feedback from the teacher through Edmodo or YouTube, allowing the student to apply the feedback to enhance or redefine their literacy work. O'Connor, Fulmer, Harty, and Bell (2005) report on the positive correlation that exists between instant and ongoing peer and teacher feedback on reading achievement in students from Kindergarten to Grade Three. A generalized theme from O'Connor et al. (2005) is that segmenting skills, word identification, work attack, reading fluency, and reading comprehension all improved for the experimental group of Kindergarten to Grade Three students who received consistent (daily) ongoing peer and teacher feedback with regard to literacy strategies and reading skills. The control group, on the other hand, demonstrated no significant gains in reading ability after receiving minimal to no feedback (one to three times per month) (O'Connor et al. 2005).

Ongoing and purposeful descriptive feedback may likely be one feature that enhanced students' literacy skills resulting in increased reading achievement.

iPad affordances and student use. Differentiated instruction is grounded in the notion that teachers should adjust their instruction and instructional strategies to meet the specific learning styles, needs, and interests of each individual student (Beninghof, 2011). Throughout the course of the IiLP context, the integrated multiliteracies curriculum using the iPad and integrated apps as a multimodal tool, allowed students to learn at different times, different rates, and with different tools/apps to produce individualized evidence of learning at a particular moment in time. The integrated iPads gave students choices to demonstrate their learning through different media (text, images, audio, video) and through the

multimodal features afforded by the iPad (i.e., speak selection, dictation, dictionary). For instance, students explained in the follow-up interview (see Chapter 6: Data Analysis Procedures for Parent and Student Interviews) that one of their favourite iPad features was the speak selection. If a student came across a word that was unfamiliar to them, they would first use their decoding and comprehension strategies to help decipher the word. If these strategies did not help, students could tap on the word and have it read to them. Students stated that this feature helped to further develop their reading strategies, particularly vocabulary development and comprehension skills, as the encounter with an unfamiliar word did not halt reading but rather allowed them to continue with the flow.

Another way that the students used the speak selection feature was to review their written work aurally. For example, a student completed a writing task (i.e., narrative, blog, reading response, critical review), selected their text and chose the "speak" or the 'text to speech' feature on the iPad, and had the text recited. That same feature was also used to help students read any type of written text: the iPad read to them as they followed along. When a student reads their written draft aloud or listens to someone else read it, their brain receives the information in a new way and, as a result, they are more likely to identify errors or make revisions on the organization of the paper, transitions, grammar, main idea clarity, and correct tone (Schunk 2003).

Levelled texts and differentiation. Different texts of varying genres and themes were accessible to students and no matter their reading level through the text to speech feature. When searching the internet for information or research, students indicated their reading level in the Google tool bar. Texts appropriate to individual reading levels would be instantly available to each student. The ability for students to self-differentiate allowed learners to participate in the same activity or on the same task using the same information, yet tasks were customized to each student's independent reading level. Unfortunately, the levelled text feature has been discontinued since the completion of the study; however,

the site Choosito[41] now offers the same capabilities that Google previously provided. Students here are learning at a level that suite their needs.

Students were observed enlarging text, highlighting text, using the dictionary feature to look up the meaning of a word, watching associated videos that supported the text, moving back and forth between two and three screens to access additional information, or recording their ideas orally or visually as opposed to merely in the written form. The teachers airdropped differentiated levelled texts to individual students automatically and with ease. The use of the assistive tools demonstrates that students accessed information in a number of different ways. Students were also able to self-select apps to showcase their learning and understanding according to interest and engagement. As an example, while one student might like the structure of a graphic organizer to format their thinking about a text, thus selecting the app Tools4Students,[42] another student might choose the app Toontastic[43] to demonstrate as a narrative story their understanding of a learned concept, and another student might show their learning and understanding by using the app Explain Everything and include a YouTube video that connected to the key concept as well as a blog in which they participated with a Vlog identifying key themes, connections made, and implications for future learning. Therefore, using the iPad allowed students to rely more on the modal and social affordances of the technology to assist in constructing meaning (Rowsell & Walsh, 2011). Consequently, the consistent advancement in reading skill levels and comprehension skills within the IiLP group may have been a product of the affordances of the IiLP which built on the affordances of the iPad.

Interchanging of roles between learner and teacher. The last component that I believe contributed to the advancement in reading abilities for students when participating in the IiLP was the increased interchange and interexchange of roles of learner and teacher. Students in the CRLP remained

[41] Choosito Website (https://www.choosito.com).

[42] Tools4Students is an app that has 25 graphic organizers that support reading comprehension and critical thinking skills.

[43] Toontastic is an engaging tool for digital storytelling taking students through the narrative arch as they develop oral and visually descriptive stories.

in the role of the student throughout all sessions, engaging in critical dialogue, working with a partner on revising work, providing feedback to peers, and commenting on the ideas of others on some occasions. However, when participating in the IiLP context, students were observed teaching features, components, content, strategies, and apps on the iPad to their peers. This teaching component of the IiLP was demonstrated throughout the recorded video segments and took the form of vocal articulations of discoveries that the students wished to teach others. The following example is illustrative—

> **Student 003 to Student 007**: "I was having trouble figuring out how to get this (referring to the app iBrainstorm) to turn a different colour to group my ideas at first but um if you um double click on the post-it note, then you can choose from the colours down there (pointing to the different colours)."
>
> **Student 007**: "Oh perfect! Did you know if you touch on this (referring to the pen) that you can actually draw out your Venn Diagram so that you can do your compare and contrast right in this app and not have to screen shot this and go into Explain Everything?"
>
> **Student 003**: "Cool, thanks."

This example illustrates the fluidity of role from learner to teacher in one casual encounter between two students. Examples like this were frequent in the IiLP context, not just with respect to the exchanges between learners and teachers with iPad apps and their functions, but also with regard to content and thinking strategies as demonstrated below—

> **Student 25 to Student 30**: "Student 30, did you know that Malala (a child advocate for women's rights and equity in education) ran a blog for talking about how people should have the right to an education even when the Taliban said that there couldn't be education for women or anyone during that time? She got death threats."
>
> **Student 30**: "Really? What is a death threat?"
>
> **Student 25**: "Where someone tells you that they are going to kill you if you keep doing what you are doing. So, Malala was telling everyone that they should have the right to a good education and the Taliban was going to kill her for that."

Student 30: "So that is the reason why she got shot in the head? They were trying to kill her because of she wanted people to go to school."

Student 25: "Why?"

Student 30: "Because the Taliban didn't want anyone to be educated."

Student 25: "Why not?"

Student 30: "Because with an education people would be more smarter than the Taliban and realize a way to beat the Taliban and get their country back. The Taliban wouldn't be in control anymore so they didn't want people to get smarter than them."

Student 25 "Oh my God, you're right! That freedom book that we read in class (Amnesty International, 2015), there was that one on freedom to learn that Malala wrote. Do you remember she was 15 when she was shot? People should have the right to go to school. Hey, that is like the slavery one too (referring to the book). It's like if you can't go to school, you are like a slave because the Taliban were the owners and the people were the slaves. They had to do everything they said. Do you know the Harriet person?"

Student 30: "Who?"

Student 25: "Um, Harriet Tub something. Um, oh! Harriet Tubman"

Student 30: "No who is that?"

Student 25: "That was from the freedom book too but I read about it on the blog I was writing on."

Student 30: "Oh, what did they do?"

Student 25: "She was from Africa and she was born a slave. She wasn't free from the time she was born. Seriously? Can you believe it?"

Student 30: "No! Right?"

Student 25: "She was one of them that escaped and went on the train underground."

Student 30: (laughing). "It wasn't a train underground!"

Student 25: "It wasn't?"

Student 30: (laughing) "No."

Student 25: "What was it then?"

Student 30: "It was an underground railway. People at night would sneak through sewers and stuff to escape (laughing). Is that what Harriet Tub did?"

Student 25: "Harriet Tubman. She fought for freedom and helped lots of people out. Here I will show you the blog" (student 30 takes student 25 to the blog).

Student 30: "We need to write our own blog about it. I know, let's act out Harriet Tubman's journey through the underground railroad and get Student 26 and 27 to help play a role so people in the world can see what African people went through and what they are still going through. We will use iMovie and then post this on our blog for feedback."

Student 25: "We should actually do a 'now and then' video showing how much has changed and how much still needs to change not just in Africa but in the world."

Student 30: Yah! (both students high five)

In this exchange, both students participated as learner and teacher. Not only did they exchange ideas, they taught each other meaningful, pertinent information that demonstrated connections they were making to rights and freedoms. Each student taught the other about an influential person and extended their understanding of the content. This type of exchange was frequent in the IiLP.

Based on these examples and the many more that were transcribed and observed, I believe the fluidity of roles of learner and teacher among the students in the IiLP (Leander and Boldt, 2012) affected the reading skills and comprehension abilities of the students in this study. In the exchange highlighted above, this ongoing exchange of power has students developing expert knowledge while they redesign the task and create multimodal texts (Leander & Boldt, 2012).

All in all, there are many possibilities that contributed to the higher reading scores for the IiLP group compared to the CRLP group; however, many of these link back to the affordances of the iPad and the carefully crafted multiliteracies activities with a critical literacy focus. The possibility of increased engagement and motivation, enhanced critical/creative-thinking skills due to multimodalities and

multiliteracies, the inclusion of interactive, student-centered literacy learning, increased opportunities for student collaboration and feedback, additional prospects for accommodations and differentiation, and a greater interchange of roles between teacher and learner are just a few of the likely reasons for the increase in reading scores.

Analysis Three: Interaction Effects of Curriculum and Time

To examine the question of whether there are significant differences between C, E1 and E2 on composite scores of PM Benchmarks for Phase 2 of the study (the CRLP and IiLP contrast period) I used a Repeated Measures ANOVA.

Findings illustrate that there was a significant interaction between Curriculum and time, b= .905, t (182.28) = 3.82, $p < .001$. This indicates that the increase in reading scores in the IiLP condition were .905 points higher per month than for those in the CRLP condition (Figure 9).

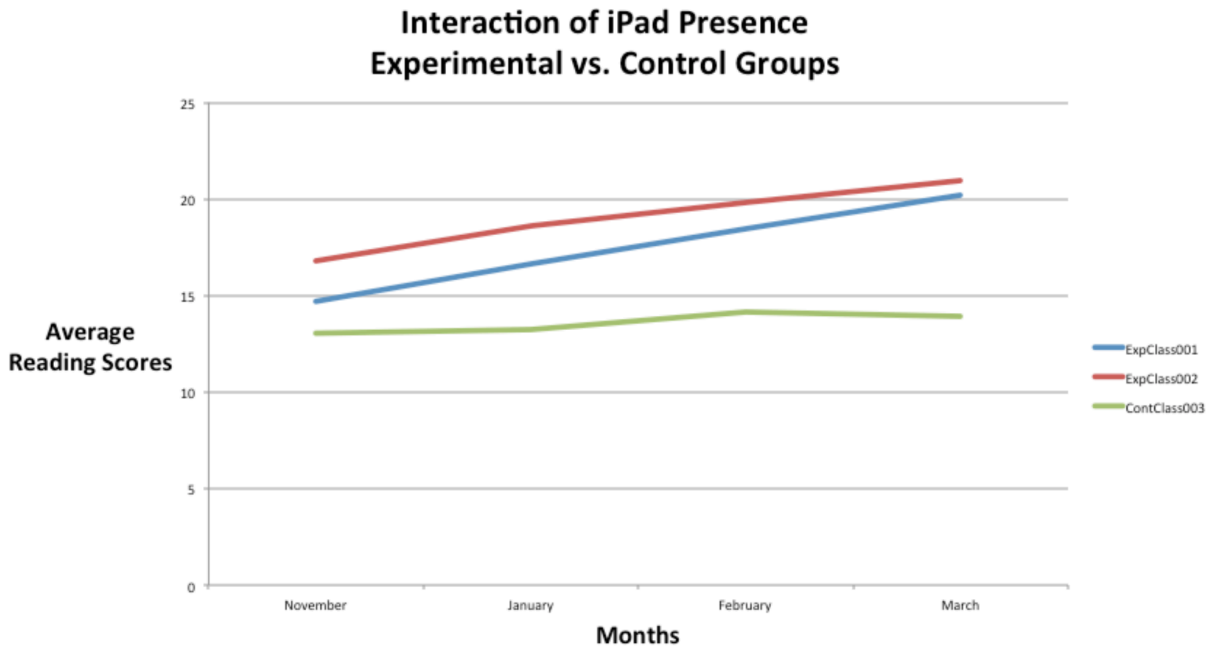

Figure 9. Interaction of iPad Presence Between the Experimental and Control Groups During Phase 2—Teaching Months 3-6

Figure 9 indicates that from the time the IiLP was implemented in the experimental classes in November (blue and red lines), there was a steady increase in reading skill and comprehension scores for both E1 and E2, while C (green line), which did not have the IiLP implemented until March, maintained

relatively even reading skill and comprehension levels with minimal gains for this testing period. Figure 9 shows that E1 (blue line) increased an average of six reading levels within this study period and E2 (red line) increased an average of five reading levels, whereas the control class (green line) increased one reading level.

Frequency of Reading Strategy Implementation During Guided Reading

At the end of a week, every student in each of the three Grade Two classes had participated in one Guided Reading session. Randomly selected week-long video observation samples of five consecutive Guided Reading sessions from Phase One, Phase Two and Phase Three of the Full Study for each of the three Grade 2 classes (C, E1 and E2) were used to tabulate the frequency of reading strategy development. A chart with the nine decoding strategies and seven comprehension strategies was used for this tabulation. Every time a reading strategy was observed, a tally was given under that particular strategy. At the end of the week long video observation session, all tallies from C, E1 and E2 were totaled to give each class a total frequency count of the strategies used within the week (See Table 14).

Table 14

Phase 1, 2 and 3—Reading Strategy Development Frequency Chart from Randomly Selected Guided Reading Video Observation Sessions for C, E1, and E2 Classes

Reading Strategies	**Average Frequency of Strategy Use Per Person**								
	Phase 1			**Phase 2**			**Phase 3**		
Decoding Strategies	**C**	**E1**	**E2**	**C**	**E1**	**E2**	**C**	**E1**	**E2**
Get your mouth ready for the word	6	8	5	5	11	10	12	12	11
Chunking	11	12	16	9	15	14	16	15	14
Slide through	9	7	9	7	6	5	5	9	7
Alternate vowel	1	0	1	1	9	8	6	8	9
Alternate consonant	0	0	1	0	5	5	6	6	7
Skip and re-read	1	0	0	1	14	12	14	16	11
Does the word make sense in context?	3	2	5	2	18	19	14	17	20
Look at the pictures	5	4	2	4	1	0	2	3	1
Spell it out	0	1	0	0	4	4	5	2	3
Comprehension Strategies									
Inferring	0	2	1	1	19	21	23	25	21
Making connections	9	7	6	8	20	19	22	24	27
Visualization	0	3	0	1	10	12	9	11	11
Determining importance	3	2	1	2	22	23	18	23	19
Synthesizing	1	1	1	2	16	15	15	17	18
Asking questions	5	5	4	6	47	46	52	54	46
Making predictions	3	7	5	5	24	20	23	22	26

Patterns in Reading Strategies Used During Guided Reading

The frequency of using reading strategies was tabulated and an average use per person was calculated. I will be interpreting the patterns within this data and investigating the similarities and differences in terms of low (0-4 occurrences of strategy use in one documented analysis), moderate (5-9 occurrences of strategy use in one documented analysis) and high (10 or more occurrences of a decoding or comprehension strategy in one documented analysis) use of decoding and comprehension reading strategies used by C, E1 and E2 at each phase of the study.

Similarities in decoding reading strategy development. Based on the decoding reading strategy development frequency counts in Table 14, *Looking at the Pictures* and *Spell it Out* had low frequency counts across all three classes and in all three phases of the study. There was a high use of *Chunking* across all three classes and all three phases of the study, while there was a consistently moderate use of *Slide Through the World* across C, E1 and E2 in Phase 1, 2 and 3. Based on the

similarities in these reading strategies I would speculate that pictures were absent from a fair number of texts that were used in the CRLP and IiLP which explains why *Looking at the Pictures* was not high on the list of decoding strategies used by the students. Throughout all three phases of the Full Study, students consistently encountered unknown words. In order to decode these unknown words, it appears that students would chunk out the word into more manageable parts and then blend them back together by *Sliding Through the Word* which was identified as being a strategy with moderate use through all three stages by C, E1 and E2.

Differences in decoding reading strategy development. The reading strategy development frequency data shows that there was a high use of *Identifying if the Word Made Sense in Context* and the *Skipping and Re-reading* strategy in the IiLP but not the CRLP. Similarly, there was moderate use of *Try an Alternate Vowel* and *Alternate Consonant Sound* for the IiLP and almost no use of this decoding strategy in the CLRP. As well, there was moderate use of *Get Your Mouth Ready for the Word* in the CRLP and a high use of this decoding reading strategy in the IiLP across all three classes.

According to Hudson, Lane, and Pullen (2005), decoding strategies such as C*hunking, Sliding Through, Using Pictures and Spell it Out* are considered to be simplistic decoding strategies that less skilled readers gravitate to when reading while more skilled readers, in addition to these simplistic decoding strategies, will also use more complex decoding strategies to identify unknown words such as *Using Alternate Vowel* and *Consonant Sounds* by trying hard and soft sounds, again with the intent to ensure the word and sounds make sense. The research done by Hudson et al. (2005) supports the patterns from the reading strategies frequency counts with respect to a large increase in complex reading strategies (i.e., alternate vowel/consonant sounds, using the context to make sense of the word, and rereading) when in the IiLP condition. Finally, highly skilled readers, use the context of the text to reinforce meaning and pronunciations, and look for root words in unknown words, again strategies used more highly when in the IiLP condition than when in the CRLP condition.

Similarities in comprehension reading strategy development. There are few similarities based on the frequency of comprehension reading strategy development across all three phases of the Full Study

in C, E1 and E2, apart from the low use of *Inferring, Visualization, Determining Importance* and *Synthesizing* in Phase 1 of the Full Study across all three classes. However, there are differences in types and frequency of comprehension strategies employed with the implementation of the IiLP in Phase 2 for the E1 and E2 groups and in Phase 3 for the Control group where these same comprehension strategies move from low usage to moderate usage for *Visualization* and from low usage to high usage for *Inferring, Determining Importance* and *Synthesizing*.

Differences in comprehension reading strategy development. The CRLP and IiLP are distinguished by the difference in attention to explicit demonstration of comprehension strategies across the board. There is some moderate use of *Making Connections* and *Making Predictions* in the CRLP but there is high use of these strategies for the IiLP and particularly high use *of Asking Questions*. In terms of this explicit demonstration of strategies, particularly the very high use of the questioning strategy in the IiLP condition, it may be that students are simply vocalizing more in the IiLP context because of their manner of interacting with the iPad and apps. That is to say vocalizing may serve the role of a pseudo-listener. This could be seen as an advantage because the auditory feedback the students get from themselves along with the responsiveness of the iPad features in terms of feedback may create a loop that reinforces auditory comments on process and in turn could account for the high usage levels of questioning in the IiLP yet low usage of questioning in particular while in the CRLP condition. The National Reading Panel (2015) identifies reading comprehension as a complex cognitive process that demands active and purposeful connections and exchanges between the text and the reader. The more skilled a reader, the greater the number of comprehension strategies they will use to understand the content. Comprehension skills are improved when students actively use strategies that include inferring, predicting, connecting, asking questions, and visualization to elicit meaning from the text (Pardo, 2004). Harris and Hodges (1995) name skilled readers as much better at using comprehension strategies effectively to create meaning. Patterns show that students in IiLP demonstrated a greater use of comprehension strategies than those students in the CRLP suggesting that the students in the IiLP were more skilled readers.

The influence of multiliteracies on IiLP participants. Some might argue that the difference between the use of more simplistic reading strategies and the frequency of reading strategies used by students in the CRLP as compared to the IiLP was due to the time of year the students were in the CRLP and the IiLP. During Phase 1 of the Full Study, all of the students in C, E1 and E2 were using more simplistic reading strategies because at this time most students might be considered less skilled readers. However, the control group did not show greater average strategy use in Phase 2 of the Full study as was the case with the experimental groups. One possible influence for these patterns and trends, is the influence of multiliteracies on IiLP participants.

Jacobs (2007) argues that when students explore multimodal literacy from online texts, they demonstrate critical engagement that can be transferred to other multimodal texts within real-world contexts. Students in the IiLP with the affordances offered by the iPad, carefully selected apps and used through enabling contexts (i.e., iPad as a pseudo listener, a means to receive instant comments and feedback) may have been advantaged as compared to students in the CRLP who were not offered this affordance.

Besides using decoding strategies more often, differences also occurred in the number and types of comprehension strategies used by students in the IiLP as compared to when in the CRLP. Iwai (2016) explains that in order to fully acquire and understand reading strategies and consequently develop advancement in reading skills, readers use three types of knowledge: declarative, procedural, and conditional (McCormick, 2003). Declarative knowledge signifies the "knowledge that a person may have about his or her own abilities and about the salient learning characteristics that affect cognitive processing" (McCormick, 2003, p. 80). For the purposes of this study, when referring to reading activities, declarative knowledge denotes the student's knowledge about the differing reading strategies. The second dimension McComrick (2003) labels "procedural knowledge," which is the "knowledge of how to execute procedures such as learning strategies" (McCormick, 2003, p. 80). Procedural knowledge includes knowing the suitable time to use specific reading strategies, which requires the learning to know how to use the reading strategies and why they are being used. There was evidence of procedural

knowledge in both reading programs as students named the reading strategy they were using to either decode an unknown word or identify the meaning or grasp the concept of the text.

However, where the difference between the CRLP and the IiLP existed was in the ability to understand how to effectively use the strategies in context. Perhaps this was because students in the CRLP context used a reduced number of strategies compared to participants in the IiLP context and therefore had less exposure and practice with an array of strategies. Students in the IiLP were recorded as using the reading strategies correctly, whereas their CRLP counterparts either did not convey this knowledge or needed other strategies (suggested most likely by the teacher) in order to aid with reading or understanding of the text (as demonstrated in the recorded video segments of Guided Reading sessions). Finally, McCormick (2003) identifies the third type of knowledge as "conditional knowledge" by which students assess the effectiveness of their reading strategy as well as how, why, when, and where to use specific reading strategies. For example, readers are able to metacognitively reflect on the value of the reading strategy used and which strategies are suited for particular texts and tasks to best achieve their reading goals. Students in both the experimental and control conditions knew the reading strategies they were using; however, it was evident through Guided Reading sessions and student Vlogs that the IiLP participants were able to clearly articulate how and why they used the reading strategy they did and what was the outcome as a result. In contrast, their CRLP counterparts most often did not justify the reason for using a particular strategy and if a student did, which was rare, they refrained from fluently expressing how and why the strategy was used and how it effectively contributed to the reading outcome. In the section to follow is a discussion of how parents talked about the ways their children were using these reading strategies at home and vocalizing the use of these strategies[44].

[44] Please refer to Appendix K and Appendix L for a graph showing averaged reading strategy development for the duration of the study for both experimental groups and the control group. Appendix K shows the progression of decoding reading strategies within all three classes over the course all three phases, while Appendix L divulges the increased frequency of comprehension strategies from Phase 1 to Phase 3 for C, E1 and E2.

Perceptions of Reading Strategy Use

To further investigate the question of whether there were differences in reading strategy use between C, E1 and E2, post-study parent interviews were examined. Of the 58 parent interviews collected, 50 parents spontaneously discussed their child's reading strategies in detail with no prompting from the researcher. For the parents who did not discuss their child's reading strategies within the parent interview, one was a parent of a student from the control group whose final PM Benchmarks assessment scores were above average for reading skills. Of the remaining seven students whose parents did not explicitly articulate the reading strategies that their child used, three were from the E1 group (two students who scored above average on the final PM Benchmark assessment and one at grade level for reading scores) and four were from the E2 group (two students scoring above average on the PM Benchmark final assessment, one scoring at grade average for reading, and one below average for reading scores based on final PM Benchmark assessment). For the 50 parents who discussed their child's reading strategies, most of the parents discussed these strategies when asked if they had seen improvements in their child's reading ability over the course of the school year. Every parent interviewed articulated an advancement in their child's reading ability. What was unexpected was the reason for this advancement. Below is a sample of parent responses that included a discussion of their child's ability to use effective reading strategies. Parents who discussed reading strategies attributed this success to the use of the iPad as a reading and teaching tool for C, E1 and E2 participants. Although there was a great deal of discussion of reading strategies by the parents in the interviews, I am unable to separate out program effects because no parents spoke of reading strategies used specifically in the CRLP condition; instead, they discussed the reading strategies when in the IiLP condition, perhaps because it was fresh in their minds.

Example # 1 From Parent Interview of Child Using Decoding Strategies

> **Parent 003**: "… my child uses harder decoding strategies to sound out words."
>
> **Teacher**: "What do you mean by this?"
>
> **Parent 003**: "Well instead of just separating the word into parts, child 003 will look at different vowel sounds instead. For instance, um, if the word was 'item', child 003 would have sounded

the word out ‘it’ then ‘em’ but then would recognize that it doesn’t make sense so would use the long ‘I’ sound to know the word is ‘Item’.

Teacher: “I see”

Parent 003: This is because of the iPad. If child 003 didn’t know the word at the beginning, she would try it out with her strategies and then if she still couldn’t get it, she would use the speak feature. Now she doesn’t use this feature at all. She just uses her reading strategies all the time and gets the word all on her own.”

Example # 2 From Parent Interview of Child Using Decoding Strategies

Parent 043: “Child 043 has improved on his reading so much since the beginning of the year. He uses more reading strategies and can read much better now because of that. He uses the iPad all the time and this has helped him with his strategies. He used to always look at the picture to figure out words and that didn’t help him but because of the iPad he will use the words around it to see if it makes sense instead. He will skip words now and read the rest of the sentence and go back to it and figure out what the word he was trying to figure out. He didn’t do this with regular books, only with books on the iPad. He is excited about what he reads now and is understanding things more.”

Example # 3 From Parent Interview of Child Using Comprehension Strategies

Parent 026: “Child 026 has gotten so much better on her reading since the summer. She loves to read because she understands what she is reading. When she is reading to her little sister she has her predict what the story will be about and half way through the story will ask her sister what it reminds her of (making connections). She always tells me at the end of her reading why she thought something happened or how it affects the world (drawing conclusions, analyzing). She is so smart now. Thank you. It is because she loves reading on the iPad and the iPad makes her think more and harder. If she doesn’t know something she is reading, she will ah look it up by doing a um Google search on the iPad and she couldn’t do that with regular books. It’s so fast.

She'll watch videos too to learn more or go onto like a blog or your Edmodo or something. She is so much better now."

Example # 4 From Parent Interview of Child Using Comprehension Strategies

Parent 049: "Child 049 is so good at reading now compared to when he first started Grade 2. He loves to read cause of the iPad and does it all the time. I think he's improved because of the things he does to read and understand what he reads. He didn't do that before."

Teacher: "What types of things does child 049 do now that he didn't do before?"

Parent 049: "Well for instance he asks himself questions when he doesn't understand something. You will hear him at the kitchen table saying things like um like, why did he do this (the character) or what does that even mean? I think that him asking it out loud helps him to figure things out. He is able to figure out the important things so he knows what he is reading (determining importance).

There were many other examples identical to these in which parents expressed improvements in their child's use of reading strategies. Further, every parent attributed the increase in the use of reading strategies to their child's reading success and referenced the iPad as a contributing factor to this success either because of their child's engagement with reading, the opportunity for the iPad to promote reading strategy development, or the increase in the amount of reading their child was doing because of the iPad. Parents' use of the same terminology that was used in class suggests that students discussed their reading strategies with their parents at home or were observed vocalizing their strategies when they used them.

Decoding strategies were used in both CRLP and IiLP literacy programs, however, the metacognitive element (which was the discussion of and reflection upon these strategies) was only demonstrated in the IiLP as seen through Guided Reading sessions, personal reflective Vlogs and parent interview responses. Similarly, both the CRLP and IiLP used comprehension strategies but only in the IiLP was there overt demonstration and articulation of the use of these strategies. This is not to say that students in the CRLP were not using the comprehension strategies to elicit meaning from the text they

were just not overtly demonstrating and articulating the use of these strategies and the benefit to their reading progress as did the students in the IiLP group.

Summary

The students in the IiLP Curriculum compared to the CRLP Curriculum had higher reading scores, were observed using complex strategies more often in school, and were more aware of their reading process in general as indicated in the video observations and interviews. I believe the iPad's features in addition to integrated multiliteracies activities and the opportunity to communicate through multimodal means, allowed for capitalizing on the program design (i.e., iPad being a pseudo-listener, assistive functions including speech to text). Factors including the demonstration of increased reading engagement and motivation to read; enhanced critical/creative thinking skills potentially due to multimodalities and multiliteracies frameworks; a greater likelihood for interactive, student-centered learning; increased opportunities for collaboration (locally and globally); increased possibilities for instant descriptive and oral feedback through technology tools (i.e., Edmodo, Explain Everything); the opportunity for instant accommodations and differentiations within the iPad context; the chance for students to interchange roles between student and educator; and the consistent opportunity for students to practice learned and discovered literacy strategies through meaningful experiences were among the findings from the Full Study. Moreover, it is possible that because of the iPad used as a tool within a rich multiliteracies framework, students acquired more complex decoding and comprehension reading strategies, which they were able to articulate in order to further advance their reading skills.

CHAPTER 6

ENGAGEMENT

Reading engagement refers to involvement in the reading process in both strategic and motivated ways (Wigfield & Guthrie, 2000), motivation to read, pleasure in participating in reading activities, choosing readings, the act of reading, and participation in reading activities outside the classroom setting (Wigfield, Mason-Singh, Ho, & Guthrie, 2014).

Adapted Motivations to Read Questionnaire/Student Attitudes and Skills Questionnaire as an Indicator of Reading Engagement

The Adapted MRQ and SASQ were used to answer the following question with respect to perceptions of student reading engagement and reading ability: Prior to the onset of the CRLP and IiLP curricula, in C, E1 and E2 samples, were there differences between parent and student perceptions of student engagement and student ability as measured by the AMRQ/SASQ? A class-totaled summary of this data highlighting the relationship between parent and student perceptions in terms of engagement and ability is shown in Table 15.

Table 15

Pre-Study Student/Parent Engagement and Ability Perceptions—Scores and Percentages of Outcomes

Class	**Coded Categories used for Engagement Perception Scores**	**Number and Percentages for Specific Individual AMRQ Perceived Engagement**		**Coded Categories Used for Ability Perception Scores**	**Number and Percentages for Specific Individual AMRQ Perceived Ability**	
E1		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	12 (60%)	13 (65%)	Score 1- Below	15 (75%)	15 (75%)
	Score 2- Moderate	5 (25%)	4 (20%)	Score 2- At Level	3 (15%)	3 (15%)
	Score 3- High	3 (15%)	3 (15%)	Score 3- Above	2 (10%)	2 (10%)
E2		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	6 (33%)	6 (33%)	Score 1- Below	7 (39%)	7 (39%)
	Score 2- Moderate	3 (17%)	3 (17%)	Score 2- At Level	6 (33%)	5 (28%)
	Score 3- High	9 (50%)	9 (50%)	Score 3- Above	5 (28%)	6 (33%)
C		**Student**	**Parent**		**Student**	**Parent**
	Score 1- Low	10 (50%)	11 (55%)	Score 1- Below	11 (55%)	11 (55%)
	Score 2- Moderate	5 (25%)	3 (15%)	Score 3- At Level	6 (30%)	6 (30%)
	Score 3- High	5 (25%)	6 (30%)	Score 4- Above	3 (15%)	3 (15%)

Table 15 indicates the perceptions of students' reading engagement levels from the students' and parents' viewpoint for each of the three study sample classes based on AMRQ and SASQ. All students'

scores from question 1, 4, 5, were tabulated based on categories pertaining to levels of engagement and for questions 3 and 9 for levels of ability. For instance, on engagement questions if students identified having low engagement (given a score of 1) for five questions and moderate engagement (given a score of two) for one question based on the developed categories of low, moderate and high engagement, these numbers would be totaled and averaged across questions to give this student a score of 1.2 which would group them in the "low reading engagement" category. This one student would be added to all of the other students from this class who were also grouped in the "low reading engagement" category to create a total number of students who perceived themselves as having low reading engagement and that total was included in Table 15 (i.e., 12 for E1). These numbers were then turned into percentages for each class to indicate the percentage of the students in the class who perceived themselves as low, moderate and high in order to make for comparable conditions between classes and categories. The same categorization and three-level coding system for perceived engagement and perceived reading ability levels (below grade reading level, at grade reading level, and above grade level used for the students was used for coding the parents responses to perceived student reading engagement (Q14 in the AMRQ) and perceived student reading ability (Q15 in the AMRQ). By transforming these numbers into percentages, I was able to compare groups despite the differing numbers of students in each class. For the full table of results divided by individual students and parents in each class refer to Appendix F.

As shown in Appendix F and simplified in Table 15, results from the AMRQ for parents and SASQ suggest possible relationships between perceptions of reading engagement and perceptions of reading abilities for both parents and students. At the onset of the Full Study, a relatively high proportion of participants associated with the E1 class perceived students as having low reading engagement (student 60% and parent 65%) as well as a below grade reading level (student/parent 75%). Somewhat similar trends with respect to a parallel between reading engagement and reading level occurred for proportions of participants for moderate and high levels of engagement and ability in E1, moderate levels of engagement (student 25% and parent 20%) were similar to moderate levels of ability (15%) as well high levels of engagement (15%) were similar to high levels of ability (10%).

The differences between class findings for perceived levels of engagement and reading ability was of interest because of the stark differences. For ease of explanation and because of the similarities that existed between parent and child outcomes, I will focus primarily on student perception sas compared to parent perceptions. The greatest difference was observed in the perceptions of low reading engagement and low reading ability categories for all three classes. Where 60% of students viewed themselves as having low reading engagement and 75% low reading ability in E1, 33% of students in E2 perceived themselves as having low reading engagement and 39% low reading ability, while 50% of students perceived themselves as having low reading engagement and 55% low reading ability in C based on the pre-study findings. Categories of perceptions of moderate and high levels of reading engagement and reading ability were fairly consistent as evident in Table 15. So why the considerable differences in categories of low engagement and ability perceptions between classes? Did these perceptions equate to actual reading ability based on PM Benchmark scores? It was important to analyze student perceptions based on actual ability scores to understand why students viewed themselves according to the category they did and identify if similarities and differences existed between these scores. To give a more comprehensive view of the similarities and differences between perceptions of reading engagement and ability and actual student PM Benchmark scores, Table 16 demonstrates the comparison between perceived ability and actual reading ability based on scores on the PM Benchmark at the Pre-Study stage in August. As with Table 15, numbers and percentages for specific individual students whose scores fell into specific ability categories based on PM Benchmark reading scores at the Pre-Study phase are included. Based on each student's PM Benchmark score, a number of 1 (below level), 2 (at level) or 3, (above level was given). For instance, if a student was reading at a level 11 in August, this is considered to be below the grade two reading level (Appendix D). This student would be categorized as being in the "below level reading ability" category. All of the students that were in this class that also fell into the below level reading category would be tallied and a total number of students in this category at this Pre-Study are shown in Table 16. As with Table 15, percentages were created for the totaled number of students in each category for the Pre-Study Phase for class comparison purposes. Perceived reading

engagement scores were included in this Table 16 as well to distinguish if similarities and/or differences between perceptions of engagement against perceptions of reading ability and actual student reading ability existed.

Table 16

Perceptions of Reading Ability vs. PM Benchmark Reading Scores Based on Pre-Study Condition with C, E1, and E2

Sample Classes	**Coded Categories Used for Perception of Ability Scores**	**Number and Percentages of Specific Individual Students Per Engagement Category for SASQ Outcomes**	**Number and Percentages of Specific Individual Students Per Ability Category for SASQ Outcomes**	**Number and Percentages of Specific Individual Students Whose Scores Per Reading Ability Level Based on PM Benchmark Pre-Study Scores (August)**
E1	Score 1- Low/Below Score 2- Medium/At Level Score 3- High/Average	12 (60%) 5 (25%) 3 (15%)	15 (75%) 3 (15%) 2 (10%)	15 (75%) 2 (10%) 3 (15%)
E2	Score 1- Low/Below Score 2- Medium/At Level Score 3- High/Average	6 (33%) 3 (17%) 9 (50%)	7 (39%) 6 (33%) 5 (28%)	7 (39%) 6 (33%) 5 (28%)
C	Score 1- Low/Below Score 2- Medium/At Level Score 3- High/Average	10 (50%) 5 (25%) 5 (25%)	11 (55%) 6 (30%) 3 (15%)	12 (60%) 6 (30%) 2 (10%)

Based on the data presented in Table 16, many possibilities emerge for perceived reading ability and actual reading ability among Grade Two students in all three samples (C, E1, and E2). Findings suggest a parallel between student's perceptions of their own reading ability and their actual reading ability. E1 showed a high degree of similarity between proportions of participants with perceptions of below reading level and actual reading level both being 75% of the class total. Minor differences were seen in the At Level and Above Level categories with 5% more students perceiving themselves to be categorized At Level for their reading when in fact they were Above Level. Table 16 presents similar proportions in all categories between Perceived Reading Ability and Actual Reading Ability for students in E2 and highly similar proportions for student's perceptions of reading ability and actual ability for the At Level category for the C group. A high degree of similarity existed as well for the below level category where 50% of students viewed themselves being below level while actual scores showed that 55% of

students in this class were below reading level. Similar comparability trends were demonstrated in the "Above Level" category where in E1, 15% of students perceived themselves as being above the grade reading level while 10% of the class were actually above the grade reading level.

The possibility of a link between engagement, self-perception of ability and actual ability is observed in other research. Clark and Rumbold (2006) found that students who enjoyed reading, read more often and in turn attained higher reading scores than those children who demonstrated low reading engagement and scored lower on reading assessments. Additional reasons for this correlation could include the fact that these students are reading more often, are developing more complex reading strategies, are attaining better skills and, as a result, are enjoying reading more because they are better at reading. However, it is difficult to know if reading engagement promotes reading ability or if ability promotes engagement or whether they have a synergistic effect on each other.

Reading more often. Students who are motivated to read and show high levels of reading engagement typically read more often as indicated on the AMRQ from the parents' and on the SASQ from the students' perspectives. A policy research report generated by the National Council of Teachers of English (2012) proposes that learners who are highly engaged and motivated readers read a variety of texts and typically read more often than learners who are unmotivated and unengaged readers. As demonstrated in the survey responses, students who perceived themselves to be better readers also commented on the fact that they read on a regular basis both at home and at school (as scored as a medium or high perceived ability—See Table 16 read a wider variety of texts; in turn, these students scored higher on the PM Benchmark Reading Assessment than students with self-perceptions of low ability or low engagement. In contrast, students who perceived themselves as having low reading engagement responded that they did not read often and read only one genre of text or few texts.

One explanation for highly engaged readers reading more frequently is tha thtey enjoyed reading and found pleasure in it. When a student is truly engaged in the act of reading, they want to read more and consequently do it more often as it gives them happiness, and enjoyment (Krashen, 2004). Students who are not engaged in the reading process, most likely would choose alternate activities as opposed to

reading. Also, those who read more gain a higher self-efficacy about their ability, which in turn motivates them to read more often and attain higher reading skills (People for Education, 2011). In conclusion, the higher the engagement, the more a student will read, and the more a student reads, the greater the reading achievement.

Development of increased reading strategies. Research also indicates that high levels of reading engagement can impact children's usable reading strategies, causing students to access and use these strategies more often and in a more critical nature (Clark & Rumbold, 2006[45]; Grabe & Stroller, 2013; Huang, Liang, & Chiu, 2013; Kucirkova, Littleton, & Cremin, 2015; McKenna & Stahl, 2015). For example, increased time spent reading means that students are more likely to use varied and refined reading strategies, thus further enhancing their reading ability (Mokhtari & Reichard, 2002[46]). The fact that this same group might demonstrate an increase in reading strategy acquisition and use could be a contributing factor to both ability and engagement, demonstrating how this study complements the findings from the current research.

Attainment of greater reading skills. The final explanation for parent and student perceptions of engagement and ability level is the evidence of greater reading skill development for students, which is said to effect levels of engagement (Afflerbach, Pearson, & Paris, 2008). Reading skills differ from reading strategies because skills are competency-based—such as the establishment of fluency, expression, and phonemic awareness—whereas the strategies are thoughtful, purposeful, and procedural cognitive approaches to reading a text (Afflerbach, et al. 2008). As shown in Chapter 5, students' decoding and

[45] Clark and Rumbold (2006) distinguish numerous leading areas signifying the advantages of highly engaged readers. These areas include advanced writing ability, reading achievement, extensive comprehension, vocabulary, and grammar acquisition, greater use of reading strategies, enhanced self-efficacy and pleasure towards immediate and future reading, optimistic reading attitudes, improved general knowledge, improved problem solving, an appreciation for different cultures, and a better awareness of human nature and decision-making.

[46] Mokhtari and Reichard (2002) examined the use of metacognitive reflection to enhance reading skills. In their study, they found that students who were more engaged readers, read more, and in turn used greater thinking and reading strategies to decode and comprehend texts. This increase in reading strategies was articulated through metacognitive reflections. Students who were highly engaged readers demonstrated a high reading ability and used more meaningful reading strategies as compared to students who demonstrated low reading engagement and were low ability readers who in turn used the same reading strategies in every context and certainly not the most appropriate strategies for the task as articulated through metacognitive reflection.

comprehension skills not only improved but became more complex when involved in the IiLP as compared to the CRLP. This data can be further supported by reviewing the results of the PM Benchmark scores for each class over the three phases of the Full Study as shown in Table 17. As with the scores in Table 15 and 16, specific individual reading scores were categorized according to three levels (below level indicates having reading score less than a 17 in grade 2), at level refers to having a reading score between 17-22 in grade 2 and above level refers to having a reading score of 23 or above in grade 2). The number of students who fell into the below level for a particular class (i.e., E1) was tallied. This same categorization was performed for all three classes across all three phases of the study (See Table 17).

Table 17

PM Benchmark Reading Scores at the Completion of Phase 1, Phase 2 and Phase 3 of the Full Study for C, E1, and E2

Sample Classes	**Coded Categories Used for Reading Ability Based on PM Benchmark Reading Scores**	**Number and Percentages of Specific Individual Students Whose Scores Fell Into Specific Reading Ability Levels Based on PM Benchmark**		
		End of Phase 1 (October)	**End of Phase 2 (March)**	**End of Phase 3 (June)**
C	Score 1- Below Score 2- At Level Score 3- Above Level	12 (65%) 7 (35%) 1 (5%)	12 (60%) 8 (40%) 0 (0%)	5 (25%) 6 (30%) 9 (45%)
E1	Score 1- Below Score 2- At Level Score 3- Above Level	13 (68%) 6 (32%) 0 (0%)	8 (40%) 2 (10%) 10 (50%)	4 (20%) 1 (5%) 15 (75%)
E2	Score 1- Below Score 2- At Level Score 3- Average	7 (35%) 7 (35%) 4 (22%)	3 (17%) 4 (22%) 11 (61%)	2 (11%) 3 (17%) 13 (72%)

Students in E1 progressed from 0% of the class reading above grade reading level to 75% of the class reading above grade level which was consistent with E2 where 72 % of students were in the above reading level category by the end of phase three of the Full Study. Remarkably, students in the control group demonstrated considerable gains when comparing Phase 2 reading score outcomes when in the CRLP as compared to Phase 3 reading score outcomes when students participated in IiLP Curriculum with E1 and E2. Although C did not experience reading score gains quite like E1 and E2, an additional 40% of the class were reading above grade level when Phase 1 is compared to Phase 3 and decrease in

students reading below average from 65% in Phase 1 to 25% in Phase 3 in the C sample. It can be suggested that with reading gains such as these, reading engagement will likely increase. Reading engagement levels in students in the IiLP condition for E1 and E2 were far greater than students in the control group as observed in the video footage. Based on these findings, it could be proposed that as student's reading scores increased, so did their reading engagement or vice versa.

Guthrie, Wigfield, Barbosa, Perencevich, Taboada, Davis, and Tonks (2004) offered that highly engaged readers attain greater reading skills than their peers who display low reading engagement. This observation is supported by Clark and Douglas (2011), who performed a large-scale survey of over 18,100 students ages 8–17 and found that students who described themselves as motivated readers were six times more likely to read above their expected age level than those who were unmotivated. Moreover, engagement was reported to be a result of acquiring the necessary reading skills to be a good reader.[47] The findings from the Full Study were similar, and they are supported by Clarke (2016[48]) and by results from an earlier study demonstrating that engagement affects reading levels (Butkowsky & Willows, 1980[49]).

[47] Students who reported being unmotivated readers and admitted to not seeking pleasure from reading were eleven times more likely to read below level than those who were highly motived readers who enjoyed reading. Findings show that students in the unmotivated reader category had not acquired the necessary reading skills needed to become master readers (Clark, 2011).

[48] In a different study, Clarke (2016) reported finding a significant positive relationship between skill attainment and reading engagement signifying that students who read more often acquired better reading skills and in turn were better readers. Although Clarke made no inference about causality, it was indicated that the more skilled a reader was and the greater the reading attainment was for that reader, the more engaged they were in the reading process. Subsequently, the greater the reader engagement, the higher the skill attainment.

[49] Butkowsky and Willows (1980) were interested in determining whether self-perceptions contributed to motivation, performance, and reading skill acquisition on reading tasks for fifth grade boys who were deemed good, average, or poor ability readers. Findings from this study verify predictions in that poor readers exhibited low self-efficacy in ability and a learned helplessness when it came to reading tasks and reading behaviours. Poor ability readers showed less persistence and dedication to the literacy task, displayed minimal reading skill, showed less persistence and dedication to the literacy task, displayed minimal reading skill acquisition, and had considerably lower original evaluations of success and expectancy of failure, which they blamed on lack of ability.

Engagement as Represented in Video Footage

Video footage was used to consider the question: Were there differences between C, E1 and E2 in engagement (as indicated by participants behaviour and embodiment) in monthly randomly selected video observations.

Involvement

Involvement was observed as any participatory behaviour demonstrating commitment in the reading of text and complementary literacy task. Involvement also included observations of body language, embodiment, and time on task.

Body language and embodiment. Body language involves the non-verbal communication of the students where ideas, intentions, and emotions are articulated by physical conduct—facial expression, posture, signals, motions, eye movement, and touch (Aviezer, Trope, Todorov, 2012). When investigating the footage of the work session videos, there was evidence of positive and negative body language in both the CRLP and IiLP. Positive body language included: a relaxed body posture with a straight back and shoulders relaxed, gestures that communicated interest and enthusiasm, high fives among the students in agreement of ideas, touching of an arm or putting an arm around a peer's shoulder, pointing to the iPad screen and getting the attention of a peer to show their work and explain their thinking, leaning into a peer when they were speaking to demonstrate active listening, arms hung relaxed at a student's side, a finger on the text to track reading in a book or on the iPad screen, and gesturing with their hands as they were speaking to a peer. Positive body language also included consistent eye contact with a peer who was speaking, affirmative movements including head nodding and smiling, and appearing to be present and focused on the task. Conversely**,** negative body languag**e** included a stiff and rigid body posture, consistent checking of the time (looking at the clock), looking at the ground or around the classroom away from the text or the literacy task, picking at something (clothes, book, doodling) demonstrating boredom or disapproval, arms folded across the chest while reading or listening to a peer read, and sitting on the edge of the chair and fidgeting, tapping of pencil, or feet.

Table 18 demonstrates the tallied frequency counts per randomly selected observation video of positive and negative body language itemized per month for each of the three classes. The highlighted section of the table indicates when the groups were involved in the IiLP as compared to the CRLP condition. Even though I did not adjust for the number of people present in any one video or derive an average positive body language and negative body language per condition (C, E1, and E2), the tallies in and of themselves indicate a shift from Phase 1 to Phase 2 in the E1 and E2 group and a shift Phase 2 to Phase 3 in the C group.

Table 18

Tallied Frequency Counts of Body Language Between and Among Literacy Program Contexts Per Video

Time Variable	E1		E2		C	
	Positive Body Language	Negative Body Language	Positive Body Language	Negative Body Language	Positive Body Language	Negative Body Language
Phase 1	76	132	52	122	47	118
August	43	152	25	128	34	114
September	39	118	36	114	11	127
October						
Phase 2	296	21	231	10	14	136
November	242	14	311	21	49	146
January	251	8	236	11	32	168
February	298	6	288	7	110	23
Phase 3	301	4	290	8	165	8
March	299	5	270	9	189	6
April	274	7	255	10	211	9
May						
June						

When students were in the CRLP there were greater demonstrations of negative body language than positive body language by students as compared to when students participated in the IiLP. The highlighted areas of Table 18 indicate that with the implementation of IiLP, there is an increase in the display of positive body language and the decrease in demonstrations of negative body language during that time period in all cases. The following is a brief indication of what overt positive body language looked like in the CRLP program.

Student 016: As students participate in the *Read and Reflect* literacy component, student 016 was smiling to himself as he read. He looked around to see if anyone was watching him then moved his finger to track the words while he continued to read.

Student 030: While participating in the *Reflective Partner Reading* literacy component, student 030 nods to her partner as she finishes reading and explains what she has read.

Student 051: As the student participates in *Word Work*, she excitedly clapped her hands as she completed drawing the word using bingo dabbers.

Next are examples of demonstrations of overt negative body language in the CRLP program.

Student 007: While participating in *Read and Reflect*, student 007 loudly sighs and puts his book down. He then looks around the room, looks at the clock, and overtly counts by fives the minutes he has left to read (as indicated by mouthing skip counting by 5s and pointing to the numbers in the air as he does so). After he figures out the time, he picks up his book and starts tapping the book on the desk repeatedly. Finally, he opens the book back up to the page and looks down at the text then back up at the clock. This behaviour continued for the next ten minutes of his *Read and Reflect* time.

Student 020: While participating in *Listen and Strategize*, student 020 consistently took the ear phones on and off while looking around. On three separate occasions, she slapped her hand to her forward and shook her head rolled her eyes back in her head while shaking her head consistently side to side and sighing. Lastly, during the duration of this work period, student 020 was on the edge of her seat wiggling her legs and bumping her knees up and down.

Student 057: While at *Reflective Partner Reading*, student 057 explicitly stated to his reading partner, “This is so boring, when are we going to be done?” Also, throughout this session, he was focused away from his partner and was not able to respond to questions his partner had asked him as indicated with responses such as “I don’t know” or “Don’t ask me that.” Student 057 spent the majority of his time staring at the floor or playing

with a bracelet on his wrist, and when the timer went off to indicate the completion of the center rotation for the day, student 057 yelled out, "Thank goodness."

In contrast, overt positive body language was demonstrated in the following way in the IiLP group:

Student 007*:* While working on *Strategy Identifier*, student 007 had his eyes focused on the text with a constant smile on his face while he was reading. At one point, student 007 started laughing out loud. He spoke softly to himself while completing the task including reading the questions, identifying reading strategies, and talking about how he was going to complete the task. When he had completed the *Comic Life* task that was associated with reading this text, student 007 called two of his peers over to see his final product. As they were responding to his task, he had consistent eye contact with his peers, was holding one of the peer's arm while directing them on the iPad with the other hand, and was nodding in agreement with suggestions they made. One of the peers offered student 007 advice as to how to make it look better and student 007 responded by saying, "Great idea, thanks (student 009)."

Student 020: While participating in *Writing Workshop*, student 020 was blogging about her reaction to Malala's contribution to society. At this component, this student used her space and time through embodied compositions to capture images and videos that would add to her blog. She moved about the room and later the school taking unbound pictures and video recordings of moments and representations that she used to make connections related to this literacy task. Student 020 was involved in Wayfaring (to be described below) as she moved about the space uninhibited because of the mobile device, capturing moments in time sometimes moving into small crevices or climbing over or above items, which allowed for no end or beginning but rather was like a 'rhizome' that extends boundlessly, occupying free spaces in order to attach to other existing areas on the rhizome (Deleuze & Guattari, 1987). Student 020 was on-task for the duration of the forty-minute work period as indicated by consistently typing, videoing, taking pictures, rereading and editing, and not looking away from her iPad once. She

tracked with her finger the words she had typed, smiled to herself several times when reviewing video she recorded or pictures she took, mouthed "Yes" and nodded her head twice at her work and leaned back when she was finished with her hands clasped to the desk and a big smile on her face.

Student 057: While working in the *Read, Record, Reflect* component, student 057 read the text in its entirety without once looking up from the iPad. Student 057 then approached a peer in his group to record his reading. The two partners (student 053) sat with their shoulders touching, looking and pointing at the co-constructed success criteria on the iPad, and discussing what was needed while reading. Both students were looking at each other, nodding, and smiling. This overt positive body language continued for the entire eighty-minute period with positive gestures including high-fiving, shaking each other's arm in excitement, positive vocal expressions of approval ("You did it" and "That was amazing"), and very relaxed shoulders and body.

The final examples demonstrate the overt negative body language that occurred in the IiLP group during a typical center task rotation.

Student 013: While participating in *Word Work*, student 013 looked at his work on the iPad, then got up and went over to the criterion chart to check. Once he checked the chart, he walked around each group and looked at what each of his peers was doing. At *Strategy Identifier*, he began speaking to a peer about her project and was seen pointing to the iPad and back at her graphic organizer. Finally, he made his way back to his desk and immediately started back on the iPad. (Although student 013 was able to immediately get back on task when he returned to his seat, his actions were those that would denote distraction as he wandered around the class to stop to look at his peer's work and respond to one peer in particular).

Student 030: During *Writing Workshop,* a peer in student 030's group was explaining her idea for a blog post. During this time, student 030 continued working on her own work and made little

eye contact with the other student. She did nod in agreement and gave suggestions and affirmative gestures and verbal responses; however, she continued working on her own work during this time without a break in concentration. At face value, this collaborative sharing session does not demonstrate collaboration and included negative body language as suggested in little eye contact being made with student 030's peer. However, in listening to student 030's suggestions, she showed that she was listening to her peer and providing thoughtful feedback, which was in turn used by her peer (demonstrating a milder form of negative body language when compared with the CRLP negative body language; however, by definition of "negative body language" could still be categorized as such).

Student 051: During the *Guided Reading* component, student 051 was tapping her foot on the floor and occasionally glanced at other groups during a group discussion on reading strategies. However, when addressed by the teacher, she was able to respond to exactly what the teacher had asked and in fact made some of her own suggestions as to how social media might elicit negative attention using specific examples from the text she was reading; however, according to the negative body language criteria, could be categorized as such. (Although student 051 was able to appropriately respond to questions, her actions were those that would signify distraction).

As demonstrated in Table 18 and based on transcribed video data, when students were in the CRLP context, they displayed a much greater rate of negative body language with a much lower rate of positive body language, whereas when students participated in the IiLP context, they exhibited a much greater rate of positive body language as opposed to negative body language. Evidence indicates that students who participated in the IiLP were more engaged than students in the CRLP as indicated by a substantial increase in displays of positive body language and a reduced rate of negative body language (Jones, 2009). I would argue that the use of the iPad to perform literacy tasks led to this increased engagement.

These findings from the Full Study are consistent with other studies that identify a positive relationship between positive body language, student engagement, and embodiment (Graves, et al. 1998;

Ishak, 2015; Knight, 2015; Ruland, 2016). The result from this study and others investigating student engagement in learning tasks gives support to the fact that the positive body language and embodiment seen from the students in the IiLP led to or was an outcome of high levels of student engagement.

Time-on-task. The question of whether there are differences between C, E1 and E2 in time-on-task and off-task behaviours was examined by looking at data from three monthly randomly selected video observations for each class. When students participated in the IiLP program they were mostly consistently on-task, exhibiting minimal off-task behaviour (which only occurred during transitions) as compared to the more prevalent off-task behaviour demonstrated when students participated in the CRLP literacy program. These results also proved to be consistent across classes.

Table 19

Overall Averaged Time-on-Task Behaviour Per 40 Minute Class Session in CRLP and IiLP (Based on Interval Sampling)

	Phase 1			**Phase 2**			**Phase 3**		
Time on Task	**C**	**E1**	**E2**	**C**	**E1**	**E2**	**C**	**E1**	**E2**
On-Task Behaviour	16	20	18	14	23	20	19	24	28
Off-Task Behaviour	19	21	16	26	4	2	3	1	1

Table 19 shows the frequency counts of on-task vs. off-task behaviour in the C, E1 and E2 from all randomly selected videos from each phase of the study. When a student in the class displayed an on-task behaviour, a tally was recorded in the corresponding category. When a student in the class displayed an off-task behaviour, a tally was recorded in the corresponding off-task category. Included below is a sample of an overt demonstration of the on-task behaviour of a student in the CRLP setting.

> **Student 024:** As student 024 participated in Listen and Reflect, he actively listened to the persuasive text, "Why Earthworms Are Better Pets Than Dogs" by keeping his head down, tracked the text with his finger, and mouthed the words as he read. Immediately following the completion of the text, student 024 used the graphic organizer provided to identify the key persuasive details of the text by picking up his pencil immediately, staying engaged in the task for

the entire duration of the task, not looking up once, and smiled at himself when the timer went off to signify the completion of the CRLP.

The next example shows the off-task behavior of a student participating in the CRLP.

> **Student 033 and 034*:*** As students 033 and 034 were participating in Reflective Partner Reading, they were observed in the video footage having sword fights with their pencils, slapping each other's arms, drumming on the ground with their pencils. They were also overheard discussing the basketball intermural game they would play at lunchtime.

Although there were times that the students above exhibited on-task behaviour by reading the selected text to one another and discussing key elements from the text, there were lengthy periods of time in which the students demonstrated off-task behaviour. The next sample signifies the on-task behaviour of a student participating in Strategy Identifier in the IiLP.

> **Student 047*:*** As with the other examples of positive body language, student 047 demonstrated all of the relevant behaviours to signify positive body language and embodiment, including leaning their body forward while her peers were speaking, nodding of her head, and having her eyes focused on her work or the speaker. Student 047 was seen tapping the arm of her peer to identify she agreed with her idea, pointing to the iPad, and smiled throughout many components of the activity—her body escaped time and space. In addition to the body language, student 047 was recorded consistently passionately speaking about the task and the varying issues of fairness for women in the PanAm games which demonstrated emotion while actively listening to the ideas of her peers (as noted with the positive body language), offering additional websites for her peers to get information about the current issue of discussion (men's and women's roles in sport), and through the app Tools4Students suggesting the best tool to record her ideas. Further, an example from a specific audio sample was common from this sample to denote on-task behaviour: "Student 049, I just thought that we all have the time think about how things are not fair for women, but what about men? If you look at synchronized swimming, you don't see men. What about the floor for gymnastics, most of all women, um same with um" (another student adds, that

at her dance competitions there were mostly girls). Student 047 agreed, "Yes, so we need to think about all perspectives and not just in favour of one side over another."

Finally, I have included a sample of a moment when a student was observed being off-task when participating in the Word Work component of the IiLP.

> **Student 002:** After working for 47 minutes consistently on Word Work with her peers, student 002 turns to student 012 and says, "Wouldn't it be awesome to fly to Africa right now?" Student 012 responds by agreeing. Student 002 continues, "I wonder what we would see." Student 012 explains the types of animals they would see. Student 002 begins discussing what she thinks Africa would look like and discusses the physical features, housing, school, and how Africa would be different from Canada. This conversation lasts a total of four and a half minutes and then Student 002 asks about the word "oppression" that she is working on for the activity from this component.

Although at first glance, this conversation between students in the Word Work component does not completely adhere to the task they are to be working on, the content and topic still directly align with the task. It is important to note that each example that I have given here was a typical display of that type of time-on-task behaviour for that specific component.

Calkins and Bowles-Terry (2013) suggest that a student's literacy skills, concept attainment, and critical thinking abilities are ignited when coupled with technology, and this engagement is demonstrated through the amount of time a student spends on-task. Calkins and Bowles-Terry (2013) go on to suggest that students who explicitly work with technology are more stimulated and in turn more engaged in a task than students who work with primarily pencil and paper, therefore demonstrating greater focus and time spent on-task than students who were not engaged. Rowsell (2014) asserts that touch dominates engagement.

The engagement that students demonstrated through the factor of the time spent on task was observed through the randomly selected video footage as presented above. Students in both E1 and E2 in Phase 2 and 3 of the Fully Study were always vocally eager to begin the IiLP, as evidenced in comments

such as “I wish we could work on IiLP all day” or “Yes, I love this,” and there was a vocalization of displeasure every time the IiLP time ended. This displeasure was documented in all video footage across E1 and E2 classes with disapproving groans or sighs when the announcement that IiLP time was over. Also evident in the videos were requests made by students for additional time to continue to work on reading or literacy tasks, not because of incomplete tasks but because students wanted to continue to add detail to their work or continue to further justify their thinking as students expressed enjoyment in completing the literacy tasks. This articulation of pleasure and engagement was not observed in Phase 2 of the study for the C group in the CRLP. In fact, control group students were observed articulating displeasure at times about having to participate in the CRLP with such comments as “We have to do this again?” when referring to the literacy tasks or “I don’t want to do reading.” At no time did students ask to continue the CRLP session or cheer with excitement with the announcement of its commencement that is until the control group entered into Phase 3. Randomly selected observation videos demonstrated a change to C group students with levels of engagement and articulation of pleasure now mirroring the responses that were heard by E1 and E2 in Phase 2 of the students. Student 046 vocalized, “I love reading now” and Student 051 articulated “I hate when we have to stop writing.” as he was blogging, “I can do this all day.” The difference in articulations of pleasure and engagement from the C group in particular when moving from Phase 2 to Phase 3 was most notable. The findings would suggest that the IiLP condition elicited more comments of enjoyment and pleasure than its counterpart, the CRLP. Perhaps this was because using the iPads as part of their daily literacy program was a novelty, which by nature provoked excitement and pleasure; however, if this were true, then these explicit articulations of pleasure by E1 and E2 would taper off in Phase 3, yet this was not the case. In fact, students were more on-task and vocalizing their pleasure for the IiLP program, the iPad and its capabilities, and for the literacy tasks during this time. This articulation of pleasure and demonstration of engagement in reading as a result of participating in the IiLP were reinforced with comments expressed in the post-study interviews from both parents and students. Because the interview was completed after the Full Study was over by E1, E2 and C parents and students, no comparison between the IiLP and CRLP conditions could be made. However, it

is noteworthy to discuss these interviews from the lens of engagement and articulations of pleasure to provide further justification and legitimatize the implementation of the IiLP.

The following is a brief indication of comments that were given during the parent and student interviews when asked, "Have you noticed a difference in your child's/your reading since the beginning of the year?" Although the question can be interpreted as a question that gauges differences in reading skill and ability, all 58 interview respondents (both parent and student) also included reading engagement in their responses and articulated pleasure for reading. Moreover, all parents and students interviewed from the control group placed emphasis on the IiLP with no mention of the CRLP literacy program.

> **Parent 003:** 003 has shown tremendous improvement in his reading since the beginning of the year. He has fluency and expression and *loves to read now* (articulation of pleasure). Since he started reading on the iPad at school, *all he wants to do is read* (expression of engagement) on the iPad at home. This has made him love reading and for that I thank you (begins crying).
>
> **Student 003**: I am so much better at reading now. I used to read um baby um books, but now I read chapter books. If I have trouble reading, I chunk it out (discusses decoding reading strategies) and slide through. I um understand what I read now too because I infer the meaning (discusses comprehension reading strategies) and make connections. I never used to like reading before and now *all I want to do is read* (expression of engagement). I actually really like to read (articulation of pleasure) especially on the iPad because it is so cool all of the features.
>
> **Parent 016***:* I have to thank you because there would be tears every night trying to get 016 to read. It would be an hour ah ah, ordeal just to get reading accomplished. Now it is the *first thing 016 does when he comes home from school* (expression of engagement). I have noticed a huge improvement in ah his reading. He knows what he is reading and reads to his little brother all the time. *He loves reading on the iPad* (articulation of pleasure) and explains what he has read. Even hard things that I don't understand. He is a very good thinker and talker (communicator) because of this.

Student 016: I definitely have improved in my um reading. I hated to read before. I mean hated it 'Teacher 001'!

Teacher: Why?

Student 016: Because it was ah boring and I was never good at it so why would you um want to um do something that you are not good at? Now I know what to do to be a good reader. *Reading on the iPads are um fun* (articulation of pleasure) you know what I mean? We get to do fun stuff like Pic Collage or CompareNContrast[50] and use our strategies to be better readers. *I read on the iPad at home every night and just because I like to that's all* (expression of engagement).

Parent 022: We just came to Canada and 022 did not have lots of English. In this year it amazed me that he learned English and is reading English and knows his skills. He not like reading back home. It boring he says. He always playing. But we saw how do you say, him learning good in class here how to read and using the iPads to read and think so we bought him iPad for gift and load apps you use in class on iPad so only for education. And he *loves to read* (articulation of pleasure) and do you know Comic Life[51] to write about what he read and make comics of his reading. He loves reading and *does it all the time* (expression of engagement**)**.

Teacher: How often would he read prior to this year?

Parent 022: It was a ah ah struggle to get him to read at all ever. He said he did at school so he not need to at home.

Teacher: So that has changed?

Parent 022: Yes, oh yes. Yes, yes, yes. Now he *reads every day without me telling him* (expression of engagement). He reads books and on the iPad but I think he likes the iPad better because he uses it in class and it is more interesting.

[50] CompareNContrast is an app linked to 35 different photos as well as the capabilities to upload your own photos or texts with the purpose of comparing the similarities and differences of the visuals using a graphic organizer

[51] Comic Life is a comic strip creation app featuring visuals, word bubbles, with a variety of frameworks and backgrounds to use.

Student 022*:* I am so much better like at like reading now. I was reading at a 7 and now I am at a 22. That's amazing. And I really like reading now (articulation of pleasure**)**. Before it used to suck and I didn't like to read. *Now it is fun*. Like reading on the *iPads makes reading fun*. Like there is stuff to do when you read and like the strategies like that you use make you better. I don't know what it was but I didn't use these strategies when I read a regular book but now with the iPad, it almost forces you to use the strategies. *Now I read lots and sometimes I can't put the iPad down* (expression of engagement).

Based on the interviews, it is reasonable to deduce that students and their parents only articulated their sense of pleasure and reading engagement regarding the IiLP. Given the importance of pleasure of reading to reading achievement (Clarke, 2016; Krashen, 2016; Murphy, 2012), comments by students and parents with respect to the IiLP suggest the power of this curricular program.

There is the need to recognize that just because it was not consistently articulated in the interviews, did not mean pleasure and engagement did not exist within the CRLP. The IiLP could have been the topic of conversation at home with parents and the CRLP may have been forgotten. Because of my own interest in levels of pleasure and engagement between programs, I went back to the video footage transcriptions and also examined Edmodo (the online class site where all students submitted their work) to seek answers to these inquiries.

When examining the video footage for articulations of pleasure, although students showed that they were prepared for the CRLP work period by getting into their literacy groups quickly and expressing some positive comments about the literacy center activities, at no time did students from any of the three classes express remorse about the CRLP period being over. Also, when looking at student work submitted to the Edmodo class site, there was no work evident that went beyond the expected criteria stated in the activity. This suggests that students were simply completing the assigned work and felt no further obligation or desire to extend the literacy task beyond the allotted time or expectations.

In contrast, engagement and articulation of pleasure were demonstrated during the IiLP with students being prepared to learn, getting into their literacy groups quickly, and articulating positive

comments about the literacy block. Students routinely expressed disapproval that the literacy block had ended and asked for additional time to participate in the literacy activities, not because they had not finished their work, but because they were so involved and passionate about what they were doing. The motivation to read and the want to complete literacy tasks appeared much greater based on students' commitment to the task as shown through daily Edmodo posts. All students, regardless of needs, consistently exceeded the expectations of the task by completing more than what was asked, redefining the task to include additional justification for thinking, uploading connected videos, blogs, or infographics to enhance the literacy task, or included graphic organizations from Tools4Students or CompareNContrast to further display their critical and creative thinking.

Engagement Outside the Classroom Context

Engagement outside of the literacy program context pertained to the motivation to engage with texts other than those read in class. One readily available indicator of engagement in reading outside of the school context was that of book borrowing from the class library and through apps used on the iPad.

Table 20 shows a total of book/e-book sign-outs outside of the classroom context.

Table 20

Monthly Book/e-Book Sign-Out For Students in Grade 2

Month	Library Sign-Out			Raz Kids			Tumble Books		
	E1	E2	C	E1	E2	C	E1	E2	C
August*	32	12	21	2	0	3	1	1	2
September*	16	20	17	3	2	4	2	5	3
October*	36	24	27	4	4	3	3	2	4
Phase 1 of Study Average/Student/Month Books Borrowed	1.4	1.0	1.1	0.15	0.11	0.17	0.10	0.15	0.15
November	42	46	30	72	63	6*	41	52	4*
January	40	45	41	87	70	4*	53	67	7*
February	46	52	64	99	83	5*	59	79	3*
Phase 2 of Study Average/Student/Month Books Borrowed	2.1	2.7	2.3	4.3	4.0	0.25	2.55	3.7	0.23
March	51	53	60	110	96	54	78	84	48
April	57	54	54	134	121	66	91	91	65
May	61	59	58	151	156	75	102	121	79
June	64	63	68	178	180	136	138	154	102
Phase 3 of Study Average/Student/Month Books Borrowed	2.9	3.2	3.0	7.2	7.7	4.1	5.11	6.3	3.7

***** *Note: all students are given a Raz Kids and Tumble Books account at the beginning of each school year in every class in the school. Although it was not an explicit part Phase 1 of the study for all groups, several students used these apps on their own. As with Phase 2 of the study for the control group.*

As illustrated in Table 20 both the CRLP and the IiLP borrowed increasingly more books across the school year. Although the in-class library sign-out increased between two to three times from August to June for all three classes, the most impressive gains were the increase in e-book borrowing outside of the classroom context, most notably from the onset of the IiLP. Both experimental groups (E1 and E2) demonstrated a substantial increase in e-book borrowing starting in November (Phase 2 of the study) when the Integrated iPad Literacy Program was implemented and then in March (Phase 3 of the study) in the control classroom (C). This increase continued for all classes where eventually all three Grade two classes were borrowing over 100 e-books per month by the end of June (on average that is 5.7 e-books borrowed per student each month in Phase 3 with the lowest average number of e-books borrowed per student being 0.0 and the highest average number of e-books borrowed per student being 10). The likely

increase in e-book borrowing from the CRLP time period to the IiLP time period for each class was due to the introduction of the iPad into the context and the students' increasing comfort levels with technology. As students progressively got better with technology, they began using technology for varied purposes. Although e-book borrowing increased, traditional books were still being signed out of classroom libraries. Therefore, an overall increase in the borrowing of books was seen across classes. This might indicate that students were becoming more engaged in the act of reading and, as a result, were participating in reading more often. Another explanation is that as students became more engaged in reading and read more often, they were improving their reading skills and wanted to read beyond the classroom context for the pure enjoyment and pleasure of reading.

For iPad users at least, there is some anecdotal and interview evidence to suggest that the students were reading and not simply borrowing books. In addition to an increase in books being signed out of the class library and a steady surge in e-book borrowing among the Grade twos in the study, I also personally received many notes in student agendas inquiring about "good reading apps" and e-books to purchase. In speaking with the other Grade two teachers, both teachers experienced similar requests, particularly when the iPads were integrated into the literacy program. Most surprising was the purchase of iPads/tablets in the home as a result of the integration of the iPad in the classroom. Table 21 shows the number of personal iPads/tablets available to the students for educational uses in the home prior to the integration of iPads in the classroom (information retrieved from the Technology Survey) and how many were purchased and available to the students after the iPads were integrated into the classroom (results retrieved from the Post-Study Interviews).

Table 21

iPads/Tablets Available to Students at Home Pre-and-Post Study

iPad Use	**E1**	**E2**	**C**
iPads available for student use Pre-Study	6	7	4
iPads available for use Post-Study	18	16	15

To follow up with this increase in iPad/tablet purchases at home, parents were asked the reason for the iPad/tablet purchase. Interview responses indicated very similar replies from all parents, suggesting that purchasing an iPad/tablet was a decision their family made because of the benefits they were seeing with their child's reading and thinking skills as a result of using the iPads accompanied by rich multiliteracies and multimodalities pedagogy in the classroom, and they wanted to further this growth and development at home.

Interestingly, many parents would come to the school to seek assistance in uploading educational reading, writing, graphic organizers, and presentation apps for students to use at home. In fact, because of this interest and enthusiasm expressed in wanting to learning more about technology and how the iPad used meaningfully and purposefully could support and enhance their child's literacy and thinking skills, parent workshops were designed and provided on two separate occasions. The first workshop was held in January, where all but three parents in the experimental groups were in attendance as compared to six parents in attendance from the control group. The second workshop was held in May, and more parents from the control group attended as a result of this class' involvement in the IiLP in the final months of the school year. At this workshop, only one parent from the experimental classes was absent and two parents of the control group were absent. The parents were seeing first-hand the benefit and opportunities the integrated iPad and strategically selected apps afforded their child's literacy and thinking abilities and felt the importance of continuing to support this learning and progress at home (as evident in personal conversations during parent workshop sessions, agenda notes, and Post-Study interviews).

Engagement Through Technology Usage and Levels of Comfort

A Technology Usage Inventory (TUI) was administered to consider whether there were differences between parents and the students E1, E2 and C groups with respect to usage of technology and level of comfort with technology.

There were parallels between student and parent reports of technology usage and student comfort levels with technology. For instance, the parents who revealed that their child had limited access to technology—and therefore did not feel comfortable using technology for educational purposes—had

responses reaffirmed by their child. Likewise, those parents who disclosed that their child was exposed to technology on a regular basis at home and was involved in using technology frequently—demonstrating a high level of comfort with technology for educational purposes—had their responses reaffirmed by their child (Appendix K). Tables 22 and 23 provide summaries of usage.

Table 22

Pre-Study TUI Responses for Technology Usage

Study Group	**Frequency Counts for Student Technology Usage**			**Converted Percentages (%) based on Frequency Counts for Student Technology Usage**			**Frequency Counts for Parent Technology Usage**			**Converted Percentages based on Frequency Counts for Parent Technology Usage**		
Rating	**1 Low**	**2 Med.**	**3 High**	**1 Low**	**2 Med**	**3 High**	**1 Low**	**2 Med**	**3 High**	**1 Low**	**2 Med**	**3 High**
Control Group (C)	10	3	7	50	15	40	10	3	**7**	50	15	40
Experimental Group 1 (E1)	4	4	12	20	20	60	4	4	12	20	20	60
Experimental Group 2 (E2)	8	2	8	44	12	44	8	2	8	44	12	44

Table 23

Pre-Study TUI Responses for Comfort Levels with Technology

Study Group	**Frequency Counts for Student Comfort Level with Technology**			**Converted Percentages (%) based on Frequency Counts for Student Comfort Level with Technology**			**Frequency Counts for Parent Comfort Level with Technology**			**Converted Percentages based on Frequency Counts for Parent Comfort Level with Technology**		
Rating	**1 Low**	**2 Med.**	**3 High**	**1 Low**	**2 Med**	**3 High**	**1 Low**	**2 Med**	**3 High**	**1 Low**	**2 Med**	**3 High**
Control Group (C)	10	3	7	50	15	35	10	3	**7**	50	15	35
Experimental Group 1 (E1)	4	4	12	20	20	60	4	4	12	20	20	60
Experimental Group 2 (E2)	8	3	7	44	17	39	8	3	7	44	17	39

Based on parent and student responses, the more time a child has to use technology, the greater their comfort level will be with the technology in a variety of different contexts and situations.

Conversely, the less time a child spends using technology, the less comfortable they will be with technology.

Also of interest was the relationship between preliminary survey responses and post-student interviews with parents and students with respect to technology usage and levels of comfort. For parents who identified low tech use at home at the start, the increase in tech use at the end came as a happy surprise. For parents and students who identified their child/themselves as frequently using technology at home and displaying a high level of comfort with technology, this high level was maintained for the duration of the study. The Center for Research Education on Aging and Technology Enhancements (Czaja, Charness, Fisk, Hertzog, Nair, Rogers, & Sharit, 2006) identifies the link between successful adoption of technology in classroom programs and individual use of technology with the frequency of use and comfort levels among participants. Czaja et al. (2006) identify computer anxiety, fluid intelligence[52] and crystallized intelligence[53] as significant predictors of the use of technology. Cognitive facilities having a high self-concept with using technology, frequency of use, and taking risks in discovering new technologies and associated apps and programs all affect the student's adoption of technology. Even though classes were randomly assigned to the Experimental and Control conditions, it is interesting to see that the Control group has the highest proportion of low use and low comfort levels. Yet, participation in the IiLP seemed to have very positive effects in terms of reading achievement. The data on parents coming to the workshops speaks to the interest ignited because of the integration of iPads in the IiLP. Also, comments from the post-interview below speak to increased comfort levels.

> **Student 001: "**When I first started using the iPad, I didn't know how to turn it on or speak into it (referring to the vocal dictation feature). Now I can do it in my sleep."
>
> **Parent 001: "**We went out and bought Student 001 an iPad because he has progressed so much in school with it. He teaches us how to get information and helps his younger sisters to read and

[52] Fluid intelligence: demonstrating the ability to be open and flexible with learning and demonstrating a growth mindset in learning.
[53] Crystallized intelligence: individuals who demonstrate a stagnant and unchanged mindset in learning.

write. He knows how to use it very well."

Student 22: "Using the iPad is as easy as writing my name except faster. I can look up blogs or videos, um and responses. I can read my articles and transfer to my blog post. It's easy. You just swipe and click and um double tap (speaking to the multimodalities afforded by the iPad)."

Parent 22: "Student 22 is a genius with technology now. He never touched an iPad and now he is an expert. He can go through the iPad so quickly it makes me dizzy."

Student 50: "I have gotten better at um using um technology and um the iPad okay. I know exactly what to do and how to do it. I could never do that before. It is faster than writing and reading is more fun. Now my grandma asks me how to do things and I show her and my uncle."

Parent 50: "She is much better now. She only used technology for games. Now she knows how to use Comic Life and Hideout and is comfortable teaching me and my parents the apps."

Conclusion

Based on the outcomes from student literacy perceptions, student involvement, embodiment, articulation of pleasure, emotion, engagement outside of the classroom context, and levels of comfort and fluency with technology, I believe that students' reading engagement increased as a result of using the iPad as a digital tool accompanied with a scaffolded and supported multiliteracies curriculum as part of their regular literacy programming, and each student's motivation towards reading stretched far beyond the typical expectancy for a Grade 2 reader by extending into the student's and parent's daily lives. Students appeared to be reading more because they were highly engaged in the reading process as a result of the integrated iPad and app inclusion in a rich multiliteracies and multimodalities program. In turn, students were being exposed to more texts, resulting in the development of enhanced reading behaviours (i.e., decoding and comprehension strategies, fluency and expression). This amplified exposure to multiliteracies had an effect on the increase in students' reading skills and comprehension. The infographic in Figure 10 demonstrates the interrelationship between literacy behaviours and outcomes as a result of the findings presented. One behaviour affects the other and vice versa.

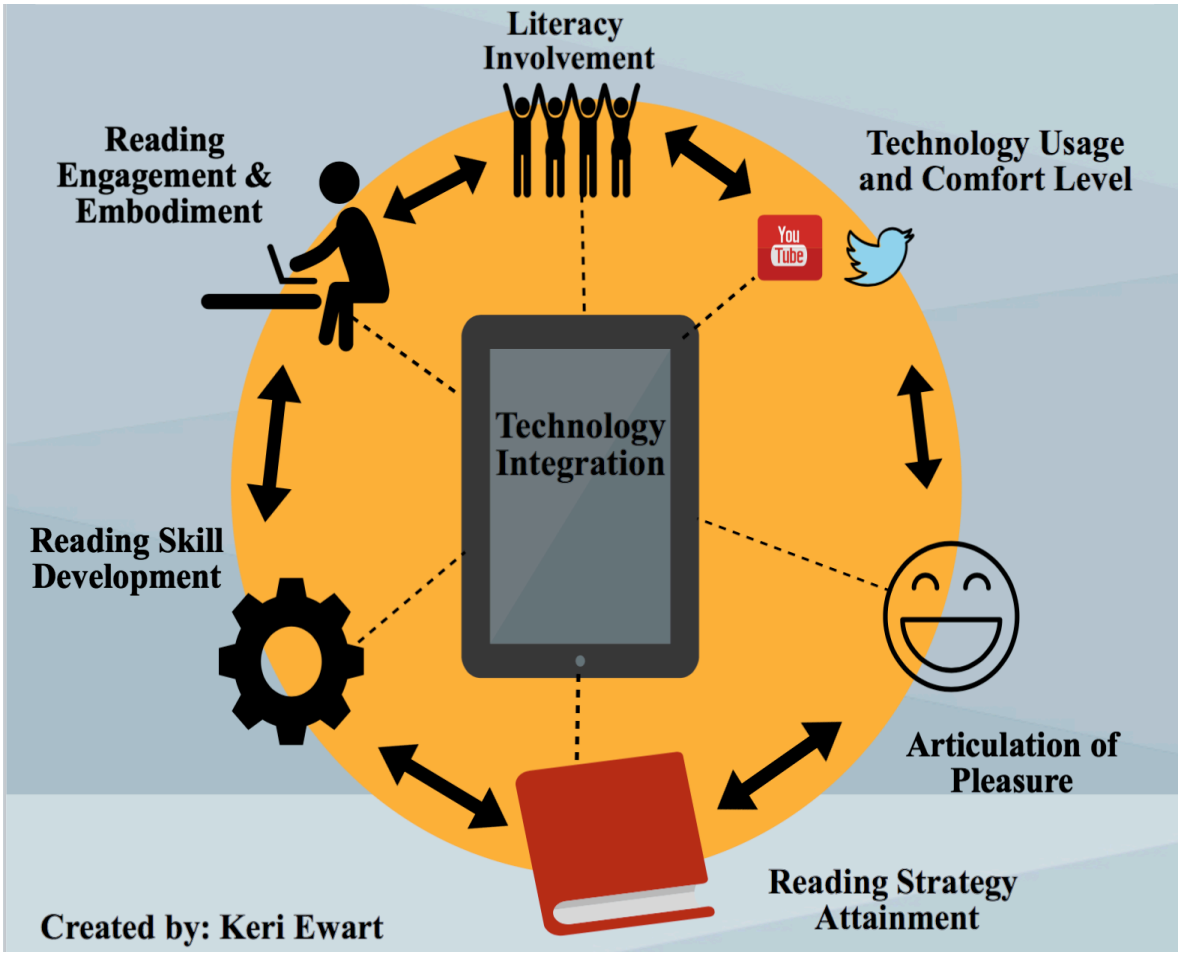

Figure 10. Relationship Between Literacy Behaviours and Outcomes

The next chapter will examine the effect technology integration has on collaborative and communicative behaviours, and it will discuss limitations of the study and implications for teachers and researchers. Following that, a final chapter will offer some suggestions as to how to best equip our students to be successful in the 21st century.

CHAPTER 7

COLLABORATION AND LEARNING: FINDINGS AND DISCUSSION

Collaboration as a competency and its relationship to student learning is the focus of Chapter 7. In particular, the concepts of collaboration with a focus on the Norms of Collaboration (Garmston & Wellman, 2009) that were built into the literacy contexts of the Full Study will be examined, as well as the progression and use of communication in both the CRLP and IiLP. The goal of this chapter is to report on the influence and impact the literacy contexts had on student collaborative behaviours and levels of communication in the CRLP and the IiLP.

Use of Norms of Collaboration

One randomly selected observational video from Phase 1 of the study for each of the Full Study groups C, E1, and E2 and one randomly selected observational video from Phase 3 of the Full Study for each of the three classes were selected with the purpose of tallying the frequency of Norms of Collaboration used throughout the duration of a literacy session by any student in the class across all literacy centers. Each time a student was observed using a norm, a tally was recorded in that particular norm category (i.e., pausing). Upon completion of viewing the video, frequency counts for each of the seven norms were totaled (See Table 24). Although the total frequency counts do not account for differences in class sizes, the purpose of tabulating this data was to examine the similarities and differences that existed between literacy contexts (CRLP and IiLP) and between study groups (C, E1, and E2).

Table 24

Evidence of Norms of Collaboration in CRLP and IiLP Contexts From Sampled Video Footage

Norms of Collaboration[54]	C		E1		E2	
	CRLP	IiLP	CRLP	IiLP	CRLP	IiLP
Pausing	6	26	8	42	4	35
Paraphrasing	5	54	7	82	11	72
Posing Questions	17	69	24	83	22	85
Putting Ideas on the Table	5	35	8	33	6	41
Providing Data	2	21	1	23	2	21
Paying Attention to Self and Others	4	28	3	40	3	39
Assuming Positive Intensions	8	54	4	64	5	31
Total	47	287	55	367	53	324

When examining Table 24 as a whole, the most frequently used Norms of Collaboration is posing questions and the least used is providing data. Interestingly these seem a bit at odds with each other—lots of asking questions but much less answering of them. However, in this instance it suggests that students call on similar types of strategies in somewhat similar proportions regardless of condition. Frequencies of Norms of Collaboration increased from Phase 1 to Phase 3 of the study for all condition groups. Considerable increases from CRLP to the IiLP across all study groups for the norm Paraphrasing is apparent in the table above. Paraphrasing, might be related to posing questions where a student reiterates what they heard another student say in their own words while attaching a question or an affirmation to the end of this paraphrase demonstrating a possible intersectionality between both norms (Garmston & Wellman, 2009).

It is valuable to consider the examples of these collaborative behaviours in each literacy context as taken from the video transcriptions to have a fuller appreciation of how these norms were present

[54] One randomly selected video from the same day in Phase 1 (CRLP) and Part 3 (IiLP) was selected for each of the three classes to analyze the frequency counts of Norms of Collaboration.

within the literacy components. The following are brief examples of how the Norms of Collaboration were used by the students when participating in the CRLP literacy program.

Pausing: Student 002 was participating in Reflective Partner Reading with Student 005. Student 005 was struggling with a word and Student 002 demonstrated *pausing* when he did not provide immediate assistance but rather asked the generic Reflective Partner Reading question, "Do you need coaching or time?" Student 005 responded by saying that she needed time and Student 002 sat back and waited patiently while Student 005 used her decoding strategies to figure out the word.

Paraphrasing: Again in the Reflective Partner Reading context when Student 017 was reviewing the main idea from the book he just read, Student 020 stated, "So you thought the main idea was about Myla getting in trouble for taking the vegetables?" Student 017 simply agreed with student 020 by responding, "Yeah."

Posing Questions: In Reflective Partner Reading, Student 024 asked Student 032, "Can you give me an example of that because I don't understand what you are trying to say?" In response, Student 032 justified the main idea of the story she just read.

Putting Ideas on the Table: During Writing Workshop, Student 051 suggested to Student 056, "Why don't you write about how it makes people feel when someone takes things without asking?" in response to student 056's statement, "I don't know what to write about."

Providing Data: During Reflective Partner Reading, Student 041 explains to Student 042, "You've been trying to read this same sentence for two minutes now. This is a waste of your time. Why don't you skip it and go back to it and then you can figure it out, but right now it is taking you too long and we only have five minutes left. Do you just want me to tell you?"

Paying Attention to Self and Others: As Student 011 was working on Word Work, she notices Student 013 taking some time to get started. She demonstrates the norm *Paying Attention to Self and Others* by stating, "I know you like using, um, the magnetic letters that I have here and I think that helps you figure out the spelling of, um, the word

better. So here (gestures to the student to take the materials), why don't you take these letters so you can do a good job and I will go get something else." Student 013 responds by thanking Student 011.

Assuming Positive Intentions: Student 029 is working on Reflective Partner Reading with Student 031. Student 031 was getting frustrated that Student 029 is trying to help him with a word that he wants to figure out on his own. Student 031 responds by saying, "I know you really want to help me with this part but is that going to help me learn?" Student 029 responded by saying, "Oh, but I know the word." Student 031 counters with, "I know you know it but I need to figure it out. I know you want me to figure it out too so can you give me time?" Student 029 responds with "Sure."

Next are examples of demonstrations of the Norms of Collaboration in the IiLP context.

Pausing: As students were working at the Strategy Identifier component, they were examining an article for bias and needing to highlight words that represented bias. Student 001 started the dialogue with his peers by stating, "Now that we have all read this, what do we know about bias?" He waited several seconds to see if anyone would answer. When nobody did answer, he asked, "Student 003, you had a great idea before about stereotypes. Can we use that to talk about bias?" Again, student 001 waited and student 003 began talking about how she would connect stereotypes to bias.

Paraphrasing: Student 017 was at Work on Writing and was reading over Student 019's blog post on the "Inequalities Between Different Parts of the World." Student 019 was watching Student 017 attentively as she read her post, and when she finished, Student 017 attempted to paraphrase Student 019's work by saying, "So what you are getting at is (school location) has many different opportunities and we have lots of computers and expensive stuff, but Attawapiskat doesn't have the same opportunities as we do, so the students there will not be able to have the same jobs as us?" Student 017 gets the approval that what she paraphrased was correct. She then went on to ask, "What other examples could you give that would support this

idea?" Student 017 and 019 continued this discussion for the next four to five minutes before student 019 goes back to work on her blog.

Posing Questions: Student 051 was working with her group at Guided Reading on an inferring task that was assigned by the teacher. The instructions were to read through an article on deforestation and infer how deforestation contributed to global warming. With the teacher sitting with this group, students were asked to record their ideas using the app Popplet. It is important to note that the teacher at no point asked the students to discuss this question with their peers. However, student 051 immediately engages in a discussion with his group asking, "Oh you remember how we saw the video about the polar ice caps? I think this is connected to this. Let's think about this like, what do you think that cutting down trees and having no more oxygen given off by trees, how does this, like, affect the ozone and our planet? Remember student 050, you had said about the carbon dioxide going in the air. Can you explain that to me like and everyone else more?" The discussion continues this way for more than ten minutes with everyone asking each other questions and answering each other's questions until they feel that the group has a good handle on the ideas and starts to record their ideas on Popplet. The teacher during this time was just sitting and listening to the conversation and making anecdotal notes.

Putting Ideas on the Table: Student 024 and Student 026 were at the Read, Record, Reflect center, and both students had just finished examining and marking the criteria together to assess whether each had displayed fluency and expression while reading. Student 024 was inquiring what Student 026 was going to focus on for his next steps to become a better reader. He asked, "You see here (pointing to the section), you did a good job with your expression but your fluency was kind of choppy. What are you going to focus on next time to make sure you are not so choppy?" Student 024 responded by saying, "I am going to make sure that I am going to slide through the words and act like I am talking." Student 026 responded with, "Okay, let's do this. Why don't you explain to me what the story you read was about and I will

record it so it is kind of like you are reading but you are really talking. Then we can look back at your reading and um your talking to see the difference." Student 024 excitedly agrees and the boys begin with this strategy.

Providing Data: All of the students in the Read, Record, Reflect group are ready to Vlog. Student 036 brings back the class data of increased reading scores over the months from the back wall (where it is always displayed) and looks up his name. He shares this data with the rest of the group who also want to refer to their reading scores. By sharing this data, the group decides to reflect on their reading gains by identifying how this increase will motivate them to keep going. The entire group creates self-initiated next steps and discuss the reading level each wants to advance to by the following month.

Paying Attention to Self and Others: During Work on Writing, Student 014 realizes that Student 021 had used a graphic organizer that was not as effective for the task of creating a video game plan for the Science Air and Water unit than the one that he used. Students were to discuss their plans and Student 014 asks Student 021, "Why did you decide to use that graphic organizer to organize your video game?" Student 021responds with, "I thought it showed all of the parts good." Student 014 explains, "I see that you have your thinking outside here (points to the space outside of the graphic organizer). Do you think it will be hard for Teacher 001 to know what you're thinking is?" Student 021 replies, "Yeah maybe." Student 014 suggests, "I found this graphic organizer that might be better. You have good ideas and have explained your thinking. I think you need more space." Student 014 then shows him the graphic organizer on the app Tools4Students. Student 014 appears to be very conscious of the way he approaches the situation. It looks as though he wants student 021's ideas and plans to still be honoured but at the same time feels that a different graphic organizer would be better suited to his work.

Assuming Positive Intentions: Students in the Strategy Identifier group were observed having a slight disagreement about what strategy each thought was best suited for comprehending a difficult text. Student 003 realized that the group is getting nowhere with the disagreement and

used his Norms of Collaboration by *Assuming Positive Intentions* to help solve this disagreement. Student 003 explains to the group, "Everyone is getting upset because you think that your strategy is the best. I think like making connections would help us figure this out, Student 004 says making inferences, Student 007 says making connections too, and Student 012 says picturing key events. These are all good ideas. Why can't we use all of these strategies to figure out the article?" Student 007 responds by saying, "Yeah but it says to like pick one." Student 003 says, "Can't we try like all of them and then whatever one helps us to figure it out, can we use that one?" The group agreed and moved on with the task.

Based on the results displayed in Table 24 and the examples of the Norms of Collaboration for both literacy contexts shown above, even though students in the C, E1, and E2 classes used norms to support collaboration, meaningful dialogue and discussion, the norms were used more frequently in the IiLP than the CRLP. For my class, I observed norms being used in all aspects of IiLP but only in the reflective partner reading and guided reading components of the CRLP. It may well be that the CRLP structure did not lend itself well to collaboration and group work as many of the tasks were approached by the students through an independent lens. By contrast, the integration of the iPad and combination of the iPad and the multiliteracies and multimodalities curriculum provided more opportunities for collaboration among students. A very real possibility that cannot be negated is the likelihood that the increase in frequency counts for the Norms of Collaboration could simply be a result of the timing of data collection. The first data on Norms of Collaboration was collected in Phase 1 of the Full Study while the second data collection was done in Phase 3 of the Full Study when all classes were participating in the IiLP. This repeated use of these norms over the course of the year could be an explanation for this increase and for this reason should be considered. There are other very plausible reasons for this increase from CRLP to IiLP countering the claim of timing, which are explained below.

Collaboration and its Relationship with Multiliteracies and Multimodalities

Through the incorporation of a multiliteracies framework, design elements provided students with the skills needed to succeed in the classroom literacy environment. For example, online and offline

writing and collaborative reading tasks (i.e., where students are encouraged to collectively read a critical literacies text and discuss its contents) allowed students to naturally gravitate to their peers to explore and negotiate ideas, challenge opinions, sort through critical content, and redesign meaning. In this environment, not only were students accessing texts using multimodal means, their communicative practices were also multimodal (visual, stylistic, auditory, and oral language being utilized to formulate text). For instance, students were collaborating in the physical sense using verbal, gestural, and visual communication, but they were also communicating online where they were harnessing modes of visual, musical, and graphical communication to correspond with others. Students shared video blogs of their analysis of a text on the varying forms of global bullying. Video blogs contained written text, visuals, auditory connections in the form of music, sound effects, podcast recordings, and video game graphics. In this sense, students were not only collaborating in class, but were also collaborating as a global community due to the pedagogical framework of multiliteracies and multimodalities (Cope & Kalantzis, 2009) in the IiLP.

Although the CRLP allowed for opportunities to think critically and metacognitively reflect, Table 24 indicates that students were not utilizing their Norms of Collaboration as freely and extensively as they were when participating in the IiLP. This could be due to the exclusion of technology in the CRLP which limited the number of interactions students had with one another as compared to when working on the iPad where students would be observed trouble shooting, searching websites, manipulating apps, sharing work, or responding to blog posts. Although both the CRLP and IiLP were designed in such a way that programs were relatively parallel, the presence of the iPad coupled with meaningful and purposeful app selection and uses through enabling contexts, scaffolded by the researchers/teachers were the discerning features between both programs. It was these dynamic features that appeared to be the influence of collaboration. However, in the IiLP students were accessing symbols, audios, videos, visuals, tweets, blogs, online chats, and more within the digital world and as a result were consistently collaborating and discussing the content and ideas from various literacies. Students in the CRLP used more print-based forms of a more traditional critical literacy program. As a result, students in the CRLP

were observed working more often independently and were negotiating opportunities and challenges alone without much collaborative interaction with peers for the purposes of expanding and exploring learning.

A key ingredient in the IiLP was to create meaningful literacy tasks using children's lived experiences within a community of learners (Cope & Kalantzis, 2015; Jacobs, 2012; Mills, 2009; Newman, 2002; The New London Group, 1996), as evident in our online writing space (blogs, Wiki) that promoted online and offline collaboration. Students were collaborating and conversing about how to use certain apps and iPad features, and collaboratively troubleshooting if there were technological issues (e.g., Wi-Fi down, apps not working). Moreover, apps used in class such as Subtext[55] and GAFE[56] provided a means for students to work collaboratively within the curricular components and on common content. These features might account for a higher incidence of collaboration in the IiLP than the CRLP. Further, the opportunity for students in the IiLP to share globally added to the accountability and authenticity of the work.

Collaboration and its Relationship with Communication

In the video footage, as shown through the many transcribed examples and during guided reading sessions, there was greater frequency of communication in the IiLP than when students were in the CRLP. The types of communicative skills that were identified included: the effective articulation of thoughts and ideas when in all of the IiLP components, conversations between students with regards to meaning-making, acquiring an understanding of texts, determining the intentions, purposes, and values of multiliteracies, and the use of these communicative skills for varying means (e.g., to teach, engage, and convince). In addition, communication about the utilization of multiple media and technologies, judging their effectiveness and assessing their impact occurred within the IiLP. Students demonstrated that they

[55] The Subtext app is an app that supports collaborative reading. It gives teachers the opportunity to generate restricted groups or private classes within the app enabling students to collaboratively read with their peers. The texts can be downloaded from Google Play, Feedbooks, and online documents which can be converted using an ePub file format.

[56] GAFE stands for Google Apps for Education and includes collaborative writing and sharing sites including Google Docs, Google Slides, Google Drive, etc.

were able to communicate effectively within diverse environments and with diverse online communities as exemplified through their Vlogs, Blogs, and Wikis. It appeared as though the greater the collaboration, the more the students communicated and the more critical their conversations. Although data were not collected on the quality of collaborative conversation and its relationship to the frequency of collaborative conversation, the patterns in the Full Study are suggestive of this pattern assuming that the conversation is based on meaningful engagement for the participants. I believe that the integrated iPads, features and purposefully selected apps afforded the students greater moments for collaboration within the literacy context resulting in increased meaningful and purposeful communicative exchanges between peers. Collaboration in this sense gives students exposure to meaningful practices within a community of learners who play multiple roles in each other's literacy contexts, providing the opportunity to experience as a pedagogical move (Cope & Kalantzis, 2015), the full repertoire of literacy components resulting in mastery of literacy skills.

Collaboration and its Relationship with the Extension of Thinking Skills

The design of the CRLP literacy program had embedded within it the development of critical and creative thinking skills. The IiLP mirrored the critical thinking stance within the CRLP. Yet, students were not extending their thinking on their own much past a basic level, nor were they engaged in the pedagogical move when in the CRLP as compare to when in the IiLP. It can also be argued that students in the CRLP were not effectively developing reasoning patterns between direct personal experience and indirect virtual experience (Cope & Kalantzis, 2015). CRLP students were not harnessing the skills needed to critically examine other people's motives, intentions, and interests as result of having limited exposure to the sharing of ideas and opinions with minimal evidence of students providing input to each other based on their work, which meant that students' critical thinking skills languished. According to Johnson and Johnson (1986), there is pervasive evidence that giving students a chance to discuss and collaborate results in them achieving higher levels of thought and retaining information longer than students who work quietly as individuals. Gokhale (1995) suggests that when students actively engage in discussing ideas and sharing their opinions through collaborative dialogue, a bond is established between

learners where they are invested in each other, causing interest to increase and critical, creative, and reflective thinking skills to be enhanced. Even though critical thinking opportunities were integrated into the CRLP, students in the CRLP typically worked as individuals despite the design of opportunities for openness, sharing, and collaborating. The only literacy component where a limited amount of collaboration and discussion was evident was in Reflective Partner Reading when a student would respond to their peers' reading. Despite the critical nature of the Guided Reading component, many discussions were initiated and maintained by the teacher regardless of the teacher's best effort to have students take on the role and responsibility of the facilitator.

In contrast, for the IiLP, every literacy component provided the opportunities for collaboration, communication, and discussion of key literary ideas, the use of various reading and writing strategies, the chance to justify their thinking, and use their critical thinking and problem solving skills (i.e., inferencing, connecting, synthesizing, judging, and evaluating.). On-task chatter was evident in all of the IiLP videos segments for all three classes. Groups expressed ideas and opinions, provided feedback and reinforcement, reported on strategies, and grappled with critical ideas, social justice issues, and relevant and current world problems. From this type of communication and collaboration came thoughtful, reflective, and critical responses and demonstrations of thinking and understanding through literacy task products, blogs, and Vlogs. Students routinely airdropped their work to each other to view and respond to, looked at articles, texts, blogs, or videos on each other's iPads, and investigated graphic organizers and peer work on the iPads on such apps as Tools4Students, CompareNContrast, Explain Everything, and Educreations. This consistent collaboration within the IiLP context could have resulted in the greater display of critical and creative thinking.

Students in the IiLP literacy program developed and demonstrated greater critical thinking skills than the students in the CRLP literacy program due to the fact that they sought out opportunities to extend their learning through collaborative discussions and critical reflections. Students in the IiLP program found additional resources on-line to further enhance their understanding of a topic or provide greater

justification for their ideas. Perhaps these patterns were due to the very nature of instantly accessing a plethora of additional information and resources on the iPad that could not be done in the CRLP setting.

Conclusion

In this chapter, findings showed that students demonstrated a higher frequency of collaboration using the Norms of Collaboration framework. When collaboration is considered in relation to multiliteracies and multimodalities and to critical thinking, it is possible that these all interrelate with each other ultimately bolstering collaboration and thinking in the process.

Chapter 8

CONCLUSION: LITERACY LEARNING WITH iPADS

At the onset of Chapter 5, I argued for the need to separate the findings of this study into three sections—Achievement, Affect, and Collaboration and Learning—for the purpose of simplicity of discussion and given the number of different data types collected. By way of a conclusion, I begin with an examination of the interconnectedness between Achievement, Affect, and Collaboration and Learning and the impact technology has on these factors as a whole.

Student Reading Engagement and Achievement Findings

First, when investigating reading scores in the first Phase of the Full Study (August-October), during which time all students participated in the CRLP literacy program, minimal changes in reading scores were reported across all three classes. Using video footage to identify similarities and differences between specific individual student engagement levels with PM Benchmark reading scores, findings indicate that students demonstrated low to moderate engagement levels despite reading ability while in the CRLP (Table 17). These findings are contrary to the survey data which indicated that parental or self-perceptions of high reading levels were generally paralleled with parental and self-perceptions of high reading engagement levels. Yet the video footage showed that students with high reading ability, displayed levels of low to moderate engagement levels when participating in the CRLP, which was unexpected. Given that I was restrictive in my video sampling (randomly selected once per month although recorded during all CRLP and IiLP sessions), this type of sampling could also deemed a possible influence on the data.

Another surprising outcome came from investigating the reading scores and comparing these to reading engagement levels in all three classes in Phase 2 of the Full Study (November, January, February, March) see Table 17. At this time both E1 and E2 were participating in the Integrated iPad Literacy Program while the C group remained in the CRLP. As indicated from the SPSS mixed model repeated design ANOVA, the experimental groups' reading levels increased on average almost an entire PM

Benchmark reading level more per month than those students in the control group who did not work with iPads as shown in Figure 8.

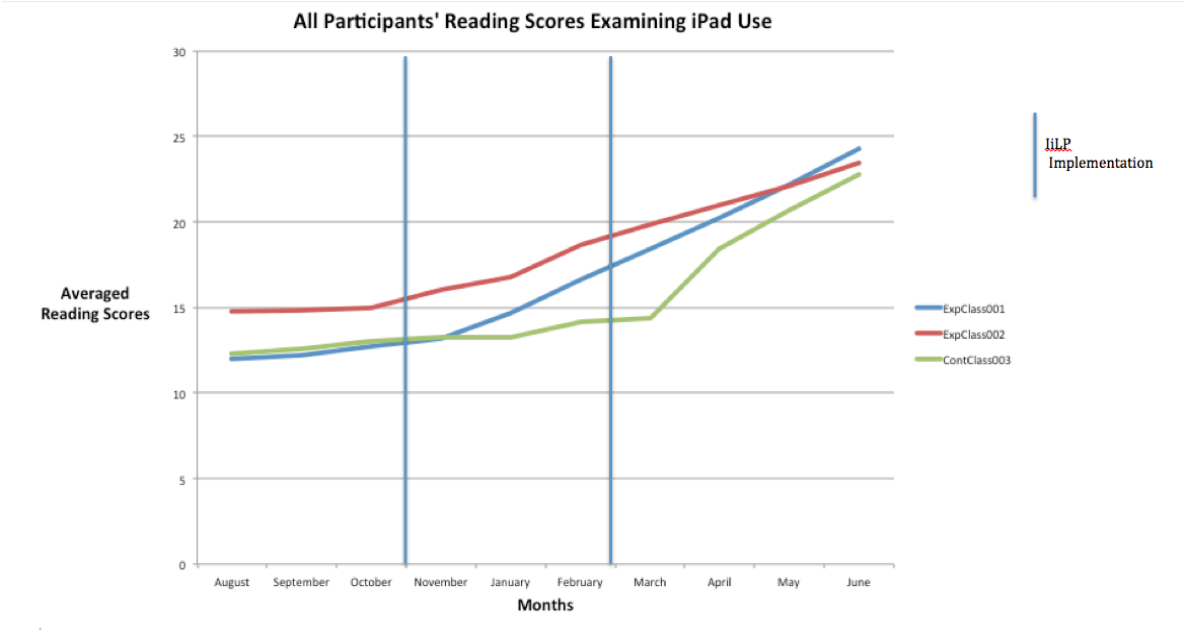

Figure 8. Increase in Reading Scores for IiLP Participants as Compared to CRLP Participants

This is to say that the reading levels of the students in the CRLP stayed relatively flat, while the reading levels for the students in the IiLP increased considerably most notably in Phase 2 after about three weeks and for the control group in Phase 3 again after the first few weeks in the IiLP condition. I suspect that it takes a few weeks in the IiLP condition to percolate due to the IiLP training that is occurring at this time. Once the students are trained in the IiLP after the first three weeks, there is a noticeable boost in their reading scores. Similarly, all students in the experimental groups displayed high levels of reading engagement as compared to the control group whose engagement levels did not change as seen when examining the recorded footage for Phase 2 based on coded videos. As a result of these findings, it is fair to say that in this Full Study, reading engagement was not necessarily an outcome of reading ability but perhaps a symptom due to the direct influence of technology infused into literacy tasks. As well, it is possible that because the students were motivated by and engaged in the multiliteracy activities using the iPad as a digital tool, reading scores escalated more so in the IiLP which directly used iPad and a fully infused multiliteracies and multimodalities curriculum as an extension of the CRLP without iPads.

The reading scores in Phase 3 of the study were compared to the video footage during this time, with an emphasis on extracting examples of reading engagement. At this time, all classes were involved in the IiLP where iPads were a regular part of the literacy program. As with the findings from Phase 2 of the Full Study for E1 and E2, on average every student's reading increased by almost one reading level per month when involved in the IiLP. Likewise, in response to the data summary of the video analysis of all classes in Phase 3, every student displayed high reading engagement levels including the control group who, prior to the implementation of the integrated iPads and apps and multiliteracies program, were demonstrating low-moderate reading engagement levels. With the inclusion of the integrated iPad and apps used as a digital tool infused into the multiliteracy/multimodality program, not only did reading scores across all students and classes improve considerably, reading engagement levels also increased substantially suggesting that the iPad may well be the reason for this growth. Interestingly, the original self-proclaimed highly engaged readers at the onset of the study experienced a decrease in engagement being categorized as having 'low' and 'moderate' levels of reading engagement while in the CRLP, yet progressed to demonstrating high engagement levels when in the IiLP. This could perhaps have been a result of the routine nature of the traditional literacy tasks experienced in the CRLP versus the engaging and exciting nature of the technologically infused literacy tasks never knowing digital connections students would make while engaging in the reading of a digital text, or how a video that they might find would support the main idea of a theme or concept they are studying, or how a blog post response to a student's post results in a response back. Krashen (2004) argues that when children are not interested in a task, their motivation and engagement level drops, which has a negative impact on their literacy behaviours. Conceivably, these highly engaged readers were not as motivated to participate in the CRLP context so they demonstrated low-moderate levels of reading engagement. In contrast, when engaging in the IiLP, students reclaimed their passion and engagement in reading.

Collaboration among students also increased from the CRLP to the IiLP (see Table 24) suggesting a greater collective involvement in literacy tasks within each of the components. This too could have been a reason for the increased engagement levels in the IiLP because students were engaged

in multiliteracies tasks and were working with their peers more often to expand upon the critical challenges and navigate through social justice issues that were available in the CRLP but utilized the suite of resources available in the IiLP and use the affordances of technology (i.e., blogging, Skyping with students across the world to learn about the inequalities and oppression that is inherent in varying communities that are different from their own) to build on their literacy skills. The iPad used as a digital tool was not required to effectively infuse a multimodalities pedagogy in the Grade 2 classrooms; however, using this digital tool dramatically changed the media, scope, and speed of communication (Jenson & Lotherington, 2011) and I speculate provided increased opportunities for students that would not have been possible without the use of the iPad or another digital device.

Last, pre-study engagement survey responses and reading scores were compared to post-study interview data, perceptions of student engagement and reading ability from the preliminary surveys, and parent and student interview responses at the completion of the study. The majority of parents and students, particularly in the experimental groups, commented that the iPad used as a literacy tool was the reason for higher engagement and higher reading ability.

When looking at the triangulation of evidence between Achievement, Engagement, and Collaboration, the IiLP including integrated apps and multiliteracies curriculum appeared to have the greatest impact on student engagement levels for all students and on ability levels for those students who were reading below Grade 2 standards. Additionally, all students across conditions benefited from the positive increase in collaborative behaviours established in the IiLP as demonstrated in Table 24.

There were no negative cases and instances in which the above patterns did not hold true in any facet of the Full Study. In both reading programs, students were involved in some way with the literacy task; however, in the IiLP condition, there was higher involvement, engagement, and proficiency in literacy skills as compared to the CRLP. This could have been due to the expected academic gains a student experiences over the course of a school year; however if this were the case then the differences exhibited in reading scores, engagement and collaboration between the experimental groups (E1 and E2) and the control group (C) at Phase 2 of the Full Study would not be so pronounced.

Critically Reflective Literacy Program vs. Integrated iPad Literacy Program: Pros and Cons

The CRLP model had positive and negative features. First, on the positive side, it did not take students long to learn the structure of the program because they had experience with traditional literacy programs from previous schooling. Most literacy programs that were reviewed in Chapter 2 used some type of structure that included a guided reading/writing component, some type of word study or word work component, a reading component, and a writing component. The CRLP had all of these components yet differed in several key ways that I feel set this literacy context apart from programs such as the D5. The first key feature that added a positive quality to the CRLP was the inclusion of metacognitive reflective opportunities at the commencement and conclusion of every session. Students' ability to reflect on their learning, thinking, literacy strategies, next steps, and literacy progression gave the them an opportunity to think about their own literacy development. Students completed these reflections in a literacy journal and were able to consider and contemplate their goals for the day and how they planned to achieve their goals. Any time that students spend participating in goal setting helps them to establish direction and focus in their learning (Tomlinson, 2014). Also, having students reflect on the strategies they use to read and write helps them to name the reading strategies used to advance their literacy skills (Cooper, et al. 2014). Over time, having children able to articulate what they are doing and why they are doing it will only help them progress as literacy learners. Affording students the opportunity to practice writing reflections in the CRLP could have provided students with the expertise of metacognition that led to their advancement in the IiLP.

A second element that I believe was a positive factor in the CRLP was the inclusion of social justice themes throughout the program. It is important for students to have an appreciation for and knowledge of the diversities and disparities within this world, especially in order to prepare students to be open-minded, critical, and creative thinkers, whereby they make sound judgments and have the foundational ability to cause significant positive change in the world. Examining visible diversities (e.g., ethnicity, sex, race, age, physical ability) and less visible differences (e.g., language, culture, religion, socioeconomic situation, ancestry, sexual orientation, gender identity) is a key element to becoming a

critically reflective and actively engaged empowered modern learner. Within our changing society, it is imperative to expose learners to the "isms" (i.e., sexism, racism, ageism) to ensure that students positively participate in society and have a complete understanding of the injustices and oppression that have historically been and continue to prevent some people from contributing and functioning to an equal, inclusive, and non-marginalized society. Exposing students to these key ideas and concepts is necessary in advancing their critical thinking skills; however, with a lack of technology integration and multiliteracies pedagogy, students lose the chance of being exposed to a greater variety of competencies associated with contemporary literacy contexts. This missing element is where both the limitations exist with the CRLP and where the benefits are present in the IiLP.

From a teacher's standpoint, the time commitment and the inclusion of reflection opportunities and social justice themes were considered positive elements. Reading scores were also increasing slightly in the CRLP across classes; however, positive reading outcomes were not nearly as great as when students participated in the IiLP context. The benefits of not having to devote too much time on introducing the components hardly seem beneficial when examining a lack of commitment and engagement among students or the restricted opportunities available to the students participating in the CRLP as compared to when students participated in the IiLP.

The greatest limitation to the CRLP, is that it limits the opportunity of ensuring students are prepared as globally literate citizens. The only aspect of the CRLP program that explicitly fostered and promoted the collaborative nature of posing and solving problems was the Guided Reading component and observations of collaboration were confined mostly to the Guided Reading component: whereas in the IiLP, video samples reveal that collaboration organically grew out of multiliteracies tasks across program components. Although the Norms of Collaboration were present in the CRLP, they were not as prevalent as they were in the IiLP. Therefore, I feel this to be a major limitation to the CRLP framework.

Another limitation of the CRLP that I found was the overall structure of the program. Despite my best efforts to use widespread traditional programs as a beginning foundation (i.e., the Daily Five) and introduce metacognition and reflection, critical literacies, and opportunities for collaboration,

the literacy needs of the students were not completely met. The structured nature of the CRLP not only limited chances for collaboration but also for the development of effective communication among its members, thus resulting in what appeared to be limited and confined thinking as shown through the video samples from the CRLP sessions. Because many students were not involved in the higher order thinking process to the extent it was seen in the IiLP and the breadth of discussions among group members was minimal compared to inherent discussions in the IiLP, the CRLP appeared to be inferior to the IiLP in this respect. I feel that this narrowness was a hindrance to the students involved in the CRLP and did not allow for the full appreciation of the text and the literacy experience of the IiLP. The CRLP was limited to very independent learning experiences where the students were participating in literacy tasks that allowed for discussion based on the key learning themes. Although my efforts as an educator were to have students read the text in the broadest sense to capture the complete essence of the text and then collaboratively discuss and work through the text or writing task, students concentrated primarily on their own individual goal of completing the task with no input or generation of ideas from their peers.

The final limitation for the CRLP context was the lack of engagement in the literacy tasks and the act of reading. Students appeared to be simply completing the tasks just to get them done rather than for the intrinsic motivation of literacy and reading skill development and attainment. This orientation towards school tasks was not completely apparent until comparison with the IiLP, where vast differences and task outcomes were evident. Perhaps students in the CRLP class viewed the tasks as boring, mechanical, and lacking creativity or originality. Maybe these tasks were so much like other literacy programs that students felt no motivation toward these literacy components. Whatever the reason, I viewed this lack of engagement as a limitation of the literacy context.

As for the IiLP, both positive and negative aspects emerged as well. When examining the positive elements, it is evident through video footage and post-study interviews that students were highly engaged and motivated throughout the duration of the literacy context and beyond, were engaged in critical discussions and collaborative inquiry, were exposed to multiliteracies through multimodal

means, and students who typically did not openly participate, were more involved and communicated and collaborated with their peers about texts and tasks.

The first advantage that I saw was the engagement that students displayed when in the IiLP context. They were excited and committed to learn as exhibited through overt reactions to the commencement of the literacy program each day (e.g.,, vocal excitement such as cheers and enthusiastic verbal utterances including "Yes" or "I cannot wait," and facial excitement such as smiles and joyous expressions), as gathered from the video recordings. Students were consistently exploring new apps, websites, learning platforms, and interactive frameworks. Students moved at their own pace and developed digital fluency astoundingly fast, which led to an increase in problem solving skill development, an improvement in providing descriptive feedback to peers and global audiences, and an increase in self and peer initiated editing of their own and peer work. The class became a community of learners and every member was invested and involved in each other's success (shown repeatedly through video footage of IiLP sessions and was absent from CRLP sessions). The class learned and adhered to various perspectives and created quality literacy products. As suggested previously, this in turn lead to an increase in student reading achievement and reading engagement.

Discussions and opportunities for group collaboration were plentiful as a result of the iPad and integrated apps used by students and consisted of critical thinking components including synthesis, analysis, evaluation, connections, and reflections, and moved through Cope and Kalantzis' (2015) pedagogical moves—Experiencing, Conceptualizing, Analyzing, and Applying, which are considered another advantage to the IiLP context. Students were thinking about what they read and felt the need to justify all responses, ask critical questions, seek clarification from peers and the global community, and be involved in digital learning contexts.

Another advantage was the students' exposure to and experience with multiliteracies using multimodal means and technology in general. This opened the students to a whole new world of learning. When in the IiLP, the children had the ability to access information at the touch of a screen, and

they were able to use a variety of different strategies to read/view/experience a text and self-differentiate to meet their own needs (e.g., use of vocal selection or accessing more simplified texts).

The final advantage of the IiLP context was that all students were expressing ideas, participating with a global society, collaborating with and critically challenging perspectives of their peers, and offering opinions. These students were eager to participate and have their ideas heard. When examining the reading opportunities within the IiLP, reading strategies and techniques became stronger and were reinforced. In analyzing discussions, oral communication was particularly complex because of the extensiveness of the dialogue, the involvement among group members, and the learning that occurred and was demonstrated from this process. Therefore, the IiLP context validated students' ideas.

Unfortunately, despite all positive applications, there were drawbacks that may act as limitations for implementation. One of the major drawbacks for teachers of the IiLP is that it is time-consuming, especially during setup. Not only do teachers have to model and discuss the components of the program (also done with the CRLP), they also have to give time for students to discuss, discover, inquire, and have think-aloud opportunities in order to understand how one might participate effectively in the literacy tasks, manipulate the technology, engage in online global discussions, upload work to Edmodo, seek out assistive devices and tools, and critically analyze texts/video/multiliteracies using various different apps. These criteria needed to be co-constructed between the teacher and the students for each one of these elements… which takes time.

By incorporating digital literacy through the use of iPads and all of the integrated apps and online sites with the Curriculum for media literacy, many of the Curriculum expectations are addressed; however, for teachers who are unfamiliar with how to effectively use and integrate this technology into their literacy program, mapping a digital literacy program onto curricular expectations could be a daunting task and can be seen as a limitation. Although a technologically literate student is one who can decode, comprehend, investigate, question, construct, and communicate using a range of modes and media, such things as app development, web design, online posts, blogging and Vlogging, and consistent use of new and innovative online sites and apps have many technical hurdles to overcome. For the teacher

who is digitally, technologically, and media illiterate, the implementation of a digital literacy program might be too much of a task to handle (Goodman, 2003). Technological and digital features, accessing multiliteracies, exposure to multimodalities, posting, accessing information, and digital editing, for example, must be taught (Salpeter, 2003), something which I believe needs to be emphasized more in the literature. All of these elements are very time consuming but in my opinion are well worth it.

Finally, access to technology is the last negative aspect of the IiLP. I was very lucky to be awarded a grant for a class set of iPads, many schools and classrooms do not have this luxury. I would argue that the IiLP can be effectively and successfully implemented in any classroom using just five iPads (or one iPad per component) and could perhaps lead to even greater opportunities for collaboration among peers and could be a wonderful follow-up to this study. As well, other digital tools such as Chromebooks or Macbooks can be used to supplement tasks within the literacy components

Limitations

As with any research study, there are typically some limitations that exist and this study is no different. Being both the researcher and the educator within this study could be seen as a limitation. If I were just one or the other, findings might have been slightly different; however, because of feasibility and access, it was easier for me to use my own class and train the other two Grade 2 teachers in order to achieve a comparable sample set. In working with the students, my research stance shifted in terms of consciously being aware of my role as a teacher/researcher. It was difficult at times to step out of the role as teacher and into the role as researcher, but like my students, I participated in the sense that different roles allowed me to internalize the results and examine the outcomes with a more neutral lens. This is not to say that I think that teacher-researchers are ever neutral; however, stances shift when students are seen as "participants" during the literacy tasks and not so much as my "students." A way I attempted to ensure that this potential limitation was acknowledged and reduced was with the inclusion of one other experimental class and a control class for comparative purposes and to alleviate any teacher effect that could have possibly resulted.

My teaching practice also shifted in relation to this research. Now that I understand the benefits of the Integrated iPad Literacy Program, I would be very reluctant to use a traditional literacy pedagogy in my classroom again due to its structured and methodological nature, limited opportunities for collaboration, and restricted critical thinking skill development. Rather, I would prefer to use an Integrated iPad Literacy Program as my everyday multiliteracy pedagogy. Based on post-program teacher planning and debriefing sessions, the other Grade 2 teachers feel the same and have designed their entire literacy program for subsequent school years as the IiLP.

My biases were such that I had already used the CRLP and IiLP context the year before in the form of a Pilot Study in my classroom and knew of the gains my students had made with their reading ability. Therefore, I went into this research study optimistically expecting greater results in the IiLP than that of the CRLP due to high student involvement and a thorough examination of the literacy tasks, not to mention the appeal of the iPad and associated apps to my students. This is why I was interested in identifying if these benefits were transferable across classes. I also wanted to investigate more deeply whether the iPads as a digital tool made a difference in students' reading ability, engagement, and collaboration. Despite all attempts to eliminate this as a limitation, this bias may have affected some portion of my study.

Another limitation of this study is that the findings are specific to the context of three Grade 2 classes in a specific school with a high ELL population and may not be generalizable to other settings. Further, research within different schools and settings is needed to determine whether the patterns noted in the findings of this study are in fact generalizable to other settings.

I am also aware of the possible effects of direct observation and audio/video recording of the literacy component sessions, which occurred between students within the components. Additionally, observation by an impartial researcher may have resulted in alternative findings, yet given the time frame of the study, alternatives were not feasible.

Another important area to address involving research limitations is the element of experience. By this I mean the fact that the students had experience with the literacy context based on the introduction of

the CRLP within Phase 1 of the Full Study, perhaps affecting Phase 2 of the study. Although I did not see much difference between students when in the CRLP (for experimental groups and the control group in Phase 1) or the control group in phase 2 of the CRLP, perhaps just having the practice was cause for slightly more collaboration or slightly better thinking skills in the second phase of the study, which may have accounted for the accelerated pace once in the IiLP condition. However, no major trends were seen; therefore, I consider this to be only a minor limitation to the study. Because E1 and E2 experienced significant gains in the second phase of the study when participating in the IiLP, as did those in the control group in the third phase of the study, I do not consider this to be a significant limitation.

Some other areas of rehearsal that could have affected the overall results of the study include the increased opportunities for discussion with the IiLP as opposed to the CRLP. Although this was highlighted as a key element for the inclusion of technology with the iPad, it also needs to be addressed as a limitation of the CRLP and the overall study. Students' collaboration and interaction in both literacy contexts with a leveled or same ability group caused interactions and communication outcomes of varying depths and breadth. Ultimately, this could have affected the group's literacy component outcomes as every participant approached the conversation with different knowledge and understanding of the text and concepts and contributed differing literacy skills. As some might consider this a negative aspect, others would see this as a positive due to the enhancements made to discussions as a result of the differing opinions, views, knowledge, and skills contributed by all students.

The final area that needs attention is the importance of digital citizenship. Although all necessary precautions were taken to limit the negative effects on students, the element of digital citizenship and privacy when using technology can be considered a limitation for any research using technology as a teaching tool. All Grade 2 students were taught about protecting their privacy and being mindful digital citizens when on the iPads. A private YouTube channel and Edmodo class site was prepared for the students in order to post all of their work and reflective Vlogs in a safe and secure forum. A class password was needed to access these sites and each student had their own private folder that remained private for the course of the study. All parents and students were briefed on internet safety and all parents

gave permission for their child to blog, post, and interact on a global forum under a pseudonym to protect their identity. Finally, the first key theme after the IiLP training period—which dealt with bullying and online bullying—was digital citizenship. Topics introduced to students for the purpose of exposing them to online features and potential issues and making them digitally aware included, for example, what makes an effective and reliable website, blogging and posting for a global audience, being aware of your audience, and critically investigating online sources. Using technology in any capacity could be considered a limitation because of the potential risks; however, I believe it is imperative that students be exposed to these topics and given the tools to become cognizant, capable, empowered, and critical digital citizens that can navigate their way through technology in order to be fully equipped to deal positively and effectively with all the worldwide web has to offer.

Implications for Future Research

The implications for this research are especially related to replication and extension of this work, especially as further research can add to the benefits achieved from using technology as a teaching tool to promote literacy skills, development, and engagement. I want the research that I have done on the significant effect of the IiLP with its implementation of integrated apps coupled with a rich multiliteracies and multimodalities curriculum effectively scaffolded by the teacher have on student literacy achievement, engagement, and collaborative skills to matter and make a difference, especially because there are no other studies that have ultimately shown that immense benefits iPads as used as a digital tool have on reading skill development and positive learning outcomes. It has already affected my thinking and teaching deeply so much so that I have presented in the IiLP to hundreds of teachers and curricular leads in North America, Europe and China and have received feedback indicating that the program has been implemented with similar effects to those described in the Full Study.

By attending to the tensions between traditions of disseminating knowledge and developing skills and competencies, while simultaneously addressing inequalities in culture, language, and education, educators can effectively prepare students for the future by empowering their modern learners. This is an imperative element in education in understanding marginalized communities. Educators must insist upon

a technology-rich robust knowledge-based Curriculum alongside skill development using multiliteracies where technology in the classroom can support both imperatives, but only if engaged thoughtfully; otherwise, there is the likelihood of having very little impact of digital technologies on teaching and learning. Although the importance for reconciling the social justice dimension with digital literacy was presented, a full discussion is far beyond the scope of this dissertation; however, I recommend a full examination of this issue in order to recognize the scope and importance of this topic to multiliteracies/multimodalities research.

Several questions that I would recommend for further investigation are: Do low achievers do better in the IiLP context than in the non-IiLP condition? Do males do better in the iPad condition than in the CRLP condition? Does the IiLP have an effect on students of varying levels of English Language Learning? Is there a difference between the use of fictional versus non-fictional material used within the IiLP? I suggest that future researchers investigate the conditions of ability, gender, ELL, and text type. The Full Study focused on whole class findings, however, it may well be that some individuals benefit more from the IiLP Curriculum than others. For instance, gender and ability might be influenced in different ways by the IiLP Curriculum and a study with these areas of focus would deepen our understanding of the impact of the IiLP Curriculum.

As a comparative analysis was done between three Grade 2 classes using experimental and control conditions, I further suggest that researchers investigate the effect of the iPad on the literacy skills of students of differing ages and divisions (primary, junior, intermediate, and senior) in order to determine whether these benefits that were experienced with primary students are transferable to the older students and to what extent these benefits are transferable. I would also urge researchers to compare different schools. This study was conducted in one urban school. An interesting study would be to investigate the use of technology to promote literacy and thinking skills in rural versus urban schools.

To acquire a more definitive answer as to the effect the iPad used as a digital tool combined with a well-planned multiliteracies program from a critical literacy lens has on reading engagement, I would recommend conducting parent and student interviews at Phase 2 of the study where E1 and E2 students

have just completed their first Phase of the IiLP condition and where C has just completed their second phase of the CRLP condition. I recommend conducting this interview again in Phase 3 of the Full Study as I did. As well, specific questions geared towards reading engagement might be appropriate to seek responses discussing reading motivation, engagement and reading for pleasure. I believe that this would give a more fulsome view on reading engagement and allow for a full comparison to be made between the experimental groups and the control group with regard to reading engagement.

Finally, the last implication I would advise researchers to explore would be the quantity of iPads (or technology) needed to effectively implement the IiLP in a classroom. In this investigation we had a class set of iPads that circulated between all three classrooms for purposes of running the IiLP. Would half a class set of iPads or one per literacy component yield the same results as this study?

Implications for Teachers

There were also many interesting results from this study that serve to offer positive implications for teachers. Outcomes from this study suggest that the Integrated iPad Literacy Program is beneficial. Therefore, classroom teachers should ensure that a multiliteracy/multimodal integrated technology program such as the IiLP is part of their standard literacy agenda in order to promote enhanced literacy and thinking skills.

Another implication for educators is that teachers may learn from observing students' interaction and discussion within groups during components and gather vast amounts of information from body language and overt signs of motivation and engagement. Through the use of anecdotal notes and criteria checklists, much of this behavior can be monitored and used for assessment and planning purposes as within this study.

If teachers are currently using a standard literacy program as a means to literacy education in their classroom, I would insist that they begin to involve students by having them metacognitively reflect on their reading and writing strategies, by infusing social justice and real-life critical issues into the program, and by providing the students with substantial multiliteracy opportunities within the literacy context. If access to iPads is an issue, this program can be supplemented with computers, netbooks,

Chromebooks, and basic tablets. Teachers could set up literacy contexts in which students freely discuss technological features, social justice issues, and multiliteracy processes both with their peers and a global audience. If teachers are not confident in using technology, perhaps the students' creation of a video game or a reader's theatre script and performance that is video recorded and posted to YouTube with the goal of receiving global feedback is an option. At any rate, teachers need to understand the benefits the IiLP affords students and use specific component features to help supplement their own current reading program.

Conclusion

This research study began with the hypothesis that the IiLP curriculum would have a positive effect on student reading achievement, increasing collaborative efforts among students, and increasing reading engagement and motivation in elementary school children. As the Pilot Study showed, the incorporation of metacognitive reflection and social justice pedagogy into the traditional literacy program was a foundational component to both literacy programs used in the Full Study. From the Pilot Study, I found that students were more engaged in literacy activities that involved iPads and demonstrated greater gains with their literacy skills over the course of the year when using iPads and integrated apps, which created the necessity to complete the Full Study. As the Full Study exhibited, I provided sufficient evidence that integrating technology in meaningful and purposeful ways to a balanced multiliteracies program had a positive impact on student reading skill development, decoding and comprehension strategy development, attainment of proficient critical thinking skills and afforded students the opportunity for increased collaborative and communicative possibilities. Furthermore, students who participated in the Integrated iPad Literacy Program were more engaged and immersed in the literacy tasks, were motived and self-directed to go above and beyond the expectations and expand on all literacy learning, and demonstrated a passion and pleasure for reading both inside and outside the classroom context when compared to not those in the CRLP. Finally, IiLP students demonstrated greater collaborative learning behaviours as outlined by the Norms of Collaboration, indicating that technology make a substantial difference in literacy learning.

The Full Study produced an enormous amount of data, of which I just scratched the surface. Because modern society deems a person literate only when they demonstrate flexible literacy skills, capabilities, and competencies, it is vital that these skills be the foundation of any literacy program. According to the National Council of Teachers of English (2012), in modern day literacy learners need to be able to:

> develop proficiency with the tools of technology, build relationships with others to pose and solve problems collaboratively and cross-culturally, design and share information for global communities to meet a variety of purposes, manage, analyze, and synthesize multiple streams of simultaneous information, create, critique, analyze, and evaluate multi-media texts, and attend to the ethical responsibilities required by these complex environments (n.p. http://www.ncte.org/governance/21stcenturyframework).

With these imperative direct links between purposeful and effective technology integration and student reading and writing success comes great responsibility for every educator. What is clear is the necessity to transform traditional literacy environments through multiliteracies and multimodalities pedagogies and the inclusion of technology to create a rich hub of 21st century literate learning.

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Appendix A

Synopsis of Critically Reflective Literacy Program (CRLP)

Component Overview

1. Guided Reading

Students participate in the *Guided Reading/Writing* component at least once a sessional rotation and it is at this center that they receive explicit reading strategy instruction, discuss and have modelled for them good reading/writing behaviours, receive exposure to difficult critical content, and are given the opportunity to collaboratively discuss this content. Providing an effective *Guided Reading/Writing* structure means ensuring instruction is differentiated, where reading strategies that focus on breadth of understanding as compared to depth of strategies are the focus.
Bookmark strategies are modeled with the focus on student discussion, critical and creative thinking development, reading and writing skill development, and mastery of skills.

Decoding Reading Strategies

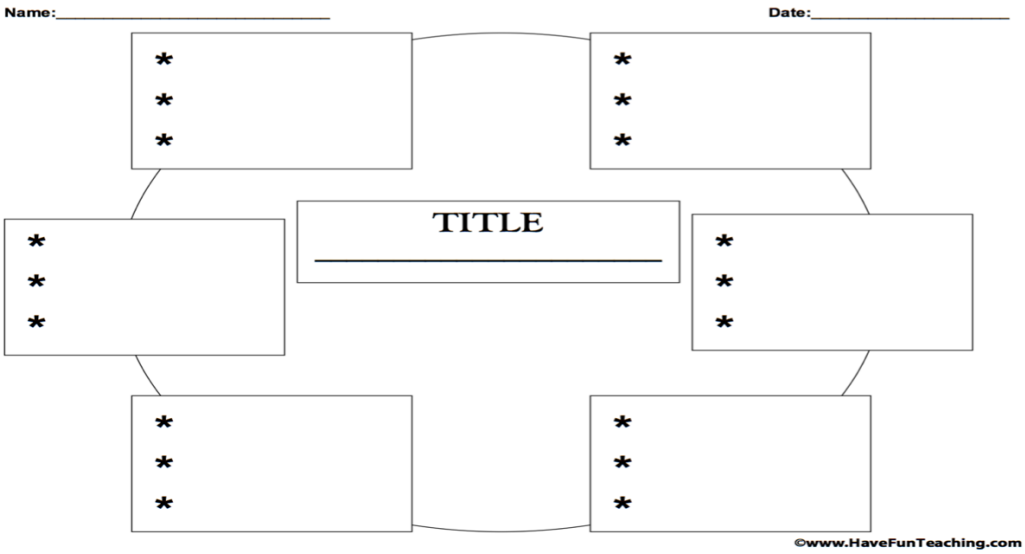
Comprehension Reading Strategies

Sample Guided Reading Lesson

Instructions:

1. We will read the text on inequalities in schooling located in front of you
2. We will read this story together focusing on decoding strategies,
   a) Chunk it
   b) Does the word make sense?
   c) Rhyming word
3. We will be working on the comprehension strategies:
   a) I wonder- any questions or anything you wonder about the story?
   b) Making connections
4. As a group, read the story (teacher guides through using the strategies)
5. Use the graphic organizer to write down your main ideas and supporting details. Write the title of the article in the center and write your main idea from the article below the title. In the boxes around the main idea, give supporting details and justifications as to why you felt this best supported the main idea (teacher will guide the students using discussion elements and focusing

on reading strategies throughout the guided reading lesson).



6. As you read, you will be thinking about what connections you can make about inequalities throughout the world from other texts and activities we have done in class. Think about what new learnings you are creating.
7. How are you going to organize your information?
8. Share with a partner and explain your strategy
9. Talk to a partner about where you can go next with this activity- what extensions might you do?

Reflective Journal:

- What did you learn?
- What strategies did you use?
- How did this help you to be a better reader?
- What do you need to do to get better at understanding what you read?
- How did the graphic organizer help you organize your thinking?
- Where are you going from here? (Next Steps)

2. Read and Reflect

The second component in the CRLP is *Read and Reflect* and harnesses the key teachings and learnings from the *Guided Reading/Writing* component to extend student literacy development. This literacy component was created in response to the recognition of the importance for students to reflect on their reading and the type of strategies they are using to be effective and skillful readers. The *Read and Reflect* component allows the students to read a self-selected or assigned leveled text independently using reading strategies that have been explicitly taught and reinforced during the Guided Reading session. After completing the text, the student will then reflect on their reading using a series of co-constructed guiding questions getting students to ponder the bookmark reading strategy they used and found most helpful during the reading session, the decoding and/or comprehension strategy they might continue to implement or how they might change a particular strategy and use a more efficient or effective strategy in the future, and their next steps as a reader. The students record these post-reading reflections in their reading reflection journal, which they review at the beginning of the next session in an attempt to guide the student into creating meaningful and authentic literacy goals.

Sample Read and Reflect Lesson

1. Choose a book at your independent reading level that you wish to read during this session (it could be related to the topic of inequality or a book of your choice)
2. Read the story over and over again until you feel that you are fluent and have great expression in your reading (make sure you are referring to the "Read and Reflect Co-Created Criteria Sheet")
3. After reading the story, you are going to reflect on the questions below and then choose three additional questions from our "Reflection List" to write about in your Reflective Journal.

Reflection Questions:

- What bookmark strategies did you use while you read?
- How did these strategies help you in your reading?
- What was the main idea of your book?
- How can you connect to this story?

Sample Reflective Questions For Students

a) Why did **you decide** to read this material?

b) Compare and **contrast this text** or media with related text/media.
Be specific–what text or media, what are the similarities and dissimilarities, etc.

c) What did the **author's purpose** seem to be? What seemed to be the Author's Purpose in creating this text? Why do you think they might've written it? What were they hoping this text would accomplish? Why do you think so?

d) What can you tell me about the **theme**? What was the theme? What were some of the theme topics (love lost, overcoming adversity, civic responsibility, etc.)? What is the author's overall message to their audience? Is there a sentence you can choose from the text that captures that? What supporting details allow you to make this inference?

e) What is the **author's position** on any relevant theme or issue?
As a result of this reading, what can you infer is the author's position on any relevant theme or issue? This will often be a social issue–poverty, love, war, courage, race, etc.

f) Who is the **audience?**
Who wants or needs to know this information? Does there seem to be a specific audience the author is trying to reach? Why do you think so? If not, what makes you think there is not a specific audience?

g) What is the overall **tone** of the work**?** What is the author's general attitude towards their audience? How do the language, content, imagery, and allusions combine to give the reading a "feel," or tone? What details help you to understand this? What can you infer about the author's position on important themes or issues because of that tone?

h) What **point of view** does the author write from?
What point of view was the book written from? What does the author seem to assume is true? Is the author biased in any way? Does the author seem to be aware of this bias? Might it be done on purpose to further the theme? Is it satirical? Ironic?

i) What are the most relevant **supporting details**?
What is the relationship between the author's purpose, thesis or theme, and supporting details?

j) How is this text **structured?**
What structural elements did you notice in the text? How did these elements impact your understanding of the content? Were there any text features that were helpful? What could they have done differently, and what effect would that change have had?

l) How would you describe the **author's writing style?**
What elements of the author's writing style did you notice? How do these elements impact your understanding or enjoyment of the text?

m) What is the general **mood** of the text?
What is the author's general attitude toward their topic? What details makes you think so? How would this text make most people 'feel'? What is the relationship between the tone, mood, and purpose?

n) How is the plot, argument, or information **organized?**
Cause/effect? Chronological order? Compare/contrast? Question/answer? Lots of options here–be specific, and defend your answer.

o) What would you **change?** Choose one important part of this reading that the author could've made a different choice—the structure, organization, purpose, audience, characterization, pacing, supporting details, mood, etc.—and then explain how they could've done it differently, and what effect it would it have had on the reading.

p) Open Create your own questions and responses based on this text.

3. ***Writing Workshop*** CRLP's third component is *Writing Workshop* and was designed with the perception that students are viewed as professional authors and peer coaches that work on more than just writing but perfecting their craft of thinking through the written text. This *Writing Workshop* component was designed to emphasize the act of writing through a collaborative community of writers to ignite passion in writing and extend thinking skills to include open-mindedness, critical-mindedness, and innovative problem-solving skills. Using real-life, authentic topics such as bullying, inequalities around the world, bias/racism/prejudice in the media, and digital citizenship students were able to tackle issues of importance and negotiate solutions that would potentially solve or begin to solve such issues. Another important element of the *Writing Workshop* was the necessity of giving students choice in their writing. During the *Guided Reading/Writing* component students are exposed to many different text forms. Students are given the choice of the text form they wish to use to articulate their ideas about a particular social justice issue or topic or they were given the opportunity to choose their own topic.

<u>Sample Writing Workshop Lesson</u>

You can choose to respond to the following question in your writing journal or choose a topic of your choice and text format of your choice from the list we created in class.

Who is the biggest hero in your life? How has this hero had the greatest impact on you, had the greatest influence in your life or made you who you are? Explain your thinking and give examples to show how this person has motivated/inspired/shaped you.

How might this change if you were one of the children we have been studying from Attawapiskat or Kenya? If one of these children would have had this influence, would their life change? How or How not? Justify your thinking.

Reflective Journal:

If you answered the question above, use the following questions as your reflection questions:

1. If you chose to answer the two-part question above, what was easy about answering this question and what was hard?
2. What did you learn about yourself from answering this question?
3. What text form did you use when writing this response? Do you feel it was effective? Would there have been another text form that would have been more effective?
4. If you were to publish your writing, what feedback do you think an editor might give you? How would you use this to improve on your writing?
5. If there was one section of your writing that you would change/keep, what would it be and why?

If you choose your own topic and text form, use the reflective questions below.

1. Why did you choose the topic and text form you did?
2. What writing strategies did you use while writing about your topic?
3. What did you learn about yourself as a writer today?
4. What connections can you make from what you wrote about today to issues we discuss in class? Other stories you read? Things in the news?
5. If you were to publish your writing, what feedback do you think an editor might give you? How would you use this to improve on your writing?
6. If there was one section of your writing that you would change/keep, what would it be and why?

4. ***Listen and Strategize***

The fourth component, *Listen and Strategize* was designed to allow students to listen to expert reader's model fluency and expression in addition to critically examining the text they heard with the focus on main idea, key themes and reading strategies that were used. After listening to the text (typically an extension of a text used at the *Guided Reading/*Writing session), students are involved in critical thinking activities to encourage the transference of reading and listening strategies as well as thinking and application strategies. At this component, students are encouraged to identify and reflect on reading strategies that were used by expert readers to become fluent and expressive.

Sample Listen and Strategize Lesson
Instructions:

1. Choose from one of the three texts available from the list below.

Something from Nothing by: Phoebe Gilman
The Three Wishes by: Jon Muth
Stone Soup by: Jon Muth

2. Read along while listening to the text on the iPod. Listen and read along the first time while "Fact"ing (Focus attention, ask yourself questions, connect ideas, try and picture important ideas in your mind). Once you have a sense of the story, listen and read along with the text for a second time, paying close attention this time to how the author reads the story.

3. Your second time reading, think about the following items:

a) what reading strategies do you think the author is reading and why?
b) where is the emphasis put when the author is reading and why?
c) think about the author's fluency and expression. How is this helping your understanding of the story?
d) what did you like about the way the author read the story that you will try or use as a reader? Is there anything you disliked? Explain.
e) from what perspective was the author reading?
f) what did you learn from this listen and strategize session?
g) what strategies will you take away from this session?

4. Record these reflections in your reflective journal.

5. Now it is your time to read. Using what you learned from listening to the author, read the text aloud to yourself. When you finish reading, reflect on this experience.

6. You are now going to create a script as a news broadcaster to share the most important points of this story as if it were unfolding on live news. What parts would be important to share?

7. Once you have written this broadcast, share your ideas with a partner from your group and listen to their ideas. After this is complete, give feedback to your partner.

5. Reflective Partner Reading The fifth component in the CRLP is *Reflective Partner Reading* and requires students who are placed in same-ability reading partnerships, to read a critical literacy leveled text with a partner and generate and share critical and engaging questions throughout the reading session. During this component, levelled partners reflect not only on the reading strategies that they are using as a reader, but also on the reading strategies they heard their partner use. Finally, the partnership within this component metacognitively reflect on their session and plan next steps for their reading and how to further engage in critical questioning moving forward.

<u>Sample Reflective Partner Reading Lesson</u>

Instructions:

1. Choose either a book with a partner or an independent book at your own reading level that you wish to read during this session (it could be related to the topic of inequality or a book of your choice)
2. Take turns reading the text using the criteria from the fluency and expression co-criteria sheet
3. If your partner has difficulty, remember to ask them if they need coaching or time. As you read, discuss the reading strategies you are using to read the story.
4. Make sure that you are "Fact"ing while you are reading and listening to reading (Focus attention, Ask yourself questions, Connect ideas, Try and picture important ideas in your mind).
5. After reading the story, you are going to reflect on the questions below and then choose three additional questions from our "Reflection List" to write about in your Reflective Journal.

Reflection Questions:

- What bookmark strategies did you use while you read?
- How did these strategies help you in your reading?
- What was the main idea of your book?
- How can you connect to this story?

Outcome Activity:
1. Choose from the class co-created list below, how you and your partner wish to demonstrate your understanding of the story.

a) News Broadcast
b) Pokemon episode
c) Create a Rap or a Song about the main ideas from the story
d) Create a game show asking for key features of the story
e) Re-enact your favourite scene from the story
f) Create an alternative ending to the story
g) You are an alien that entered the story right in the middle of the story, how might it change?

6. ***Word Work.***

The last component to be described for the CRLP is *Word Work* that involves students working on spelling, vocabulary, and grammar in authentic contextualized forums. In the case of the CRLP it could have been vocabulary related to the Rights of a Child or other Social Justice issues such as Racism that we studied). Therefore, much of the student's spelling and vocabulary words for this component are derived from the *Guided Reading/Writing Workshop* components. Students have choice in their spelling and vocabulary words and spelling is practiced within the context of reading and writing. Therefore, the *Word Work* component is typically directly linked to the Work on Writing component where after self and peer-editing, students would take the time to further practice the misspelled words to enhance their writing. When a student encounters an unknown word, they would add that to their spelling and vocabulary list to use and practice during *Word Work.* At this component, students reflect on the spelling strategy used to negotiate the spelling of the unknown word and in turn create a personalized spelling and vocabulary strategy bank, which the students consistently add to. Further, each student has the opportunity to practice, narrate, visually demonstrate, or dramatize their spelling and vocabulary words as they wish. The goal for this component is to enhance the creative process and have students create critical and creative strategies to develop strategic spelling tactics to become better spellers and create authentic meaning of vocabulary words.

Sample Word Work Component Lesson

Instructions:

1. Using our Social Justice vocabulary list and your own personal vocabulary and spelling list that you have added to during your center rotation, you will choose eight words to work with during this session
2. You are first going to define the word using examples from class and based on your own understandings and create a narrative using this key vocabulary. Pay close attention to the spelling features and rules.
3. After writing your short story, come up with a game that you would play using this story to help teach this vocabulary and spelling rules.
4. Explain this game to a partner in the group and play your game.

Social Justice Vocabulary:

1. Inequality
2. Harmony
3. Diversity
4. Equity
5. Bias
6. Prejudice
7. Racism
8. Peace
9. Multicultural
10. Accessibility
11. Sexism
12. Ageism
13. Heterosexism
14. Advocate
15. Agent
16. Change
17. Classism
18. Discrimination
19. Dialogue
20. Conflict

Reflective Journal:

- What did you learn about spelling and vocabulary at this center?
- What strategies did you use?
- How did this help you to learn the social justice vocabulary?
- How will creating a narrative and game help people to learn more about these issues?
- How does this expand your critical understanding of the issue?
- What are your next steps?

Goal Setting

a) What Daily Five Centers do I plan on visiting today?
b) What decoding strategies do I plan on using?
c) What comprehension strategies do I plan on using?
d) How will I make sure I maintain my stamina?
e) My reading goals are…..
f) My writing goals are….
h) I achieved my goals by…

Appendix B

Synopsis of Integrated iPad Literacy Program (IiLP)

Integrated iPad Daily Five Literacy Program Training Schedule

Note: *The activities outlined below provide the structure for the Integrated iPad Daily Five Literacy Program Training series. There may be times where activities or timing will have to change due to school related activities, student discoveries, teachable moments and regular unexpected classroom occurrences. There will be the best attempt to adhere the outlined schedule and tasks at all times.*

The bullying theme is being used at the training stage because it is something that is real and authentic to the students, a theme that is promoted in the X Board of Education and a theme that promotes critical and creative thinking skills among the students. This theme will prepare the students for the social justice issues that will follow in subsequent IIDFLP study sessions.

Training Week 1 Focus: the focus for this first week of training is to get the students accustomed to the iPads and several integrated apps as well as the concept bullying and anti-bullying. The students will be learning about such features as:

- ⇒ Airplay
- ⇒ Airdrop
- ⇒ Notes section
- ⇒ Speak selection
- ⇒ Verbal dictation
- ⇒ Copying and pasting
- ⇒ Camera and video- Vlogging
- ⇒ Screenshot
- ⇒ App locator
- ⇒ WiFi settings
- ⇒ Microphone settings
- ⇒ Apple TV

The apps that the students will be introduced to this week include:

- ⇒ Educreations
- ⇒ CompareNContrast
- ⇒ iBrainstorm
- ⇒ Second Fiction
- ⇒ Explain Everything
- ⇒ Comic Life
- ⇒ Tools4Students
- ⇒ Dropbox
- ⇒ Edmodo
- ⇒ KidsBlog
- ⇒ Digital Texts
- ⇒ Websites

Big Idea: Bullying/Anti-Bullying and Difference, Making Connections and Inferring

Day 1: (Triple Literacy Block)

Lesson Focus:

- Decoding strategy: chunk it out and slide through the word
- Comprehension strategy: Main idea and Inferring
- Issue: Bullying
- Overall message: Stand up for what you believe

iPad Focus: *Notes section (speak dictation and listen feature), Airdrop, Educreations, iBrainstorm*

Part 1: Airdrop (5-10 minutes)

- Teach students how to use the airdrop feature by having them slide up from the bottom of the iPad between "mail and video" to display the "airdrop and airplay" icons. Have the students ensure that they have selected "everyone" in "Airdrop ".
- Once the students have turned their Airdrop on, the teacher will Airdrop the following article copied about the Alberta teen who was bullied on her Facebook page and what she did to respond to the bullying (retrieved from http://www.torontosun.com/2014/10/07/student-responds-to-bullying-with-positive-post-its-school-punishes-her-for-littering- grade 2/3 reading level)
- Students will first be sent the following image through Airdrop

Caitlin Prater-Haacke poses with a sticky note in her family's home in the city's southwest on Tuesday, Oct. 7, 2014. The Grade 11 student at George McDougall High School was bullied last week and responded on Monday by posting upwards of 850 positive post-it notes on student and faculty lockers. BRITTON LEDINGHAM / AIRDRIE ECHO / QMI AGENCY

- They will accept the image by selecting "accept" and this image will appear in their camera section saved as an image. It is really important to teach the students that once they have accepted the image (or in other cases a text), they go back into their "Airdrop" feature and turn it off. This will allow for the teacher to determine who has received the Airdrop and who is still waiting.

Part Two: Copying an Image and Pasting it into Educreations (5 minutes)

- Students will be instructed to copy the image from the camera section by pressing down and holding their finger on the image. The "copy" option will appear.
- Once they have copied the image, the students will be instructed to go into the "Educreations app". If they swipe down from the top of the iPad between "photos and camera", they will be able to type in the name of the app and select a specific app, which saves a lot of time instead of searching through the entire iPad.

Part Three: Educreations (15 minutes)

- Once in Educreations, students will touch on the landscape icon (beside the large T (title icon) and choose the "photos" option. When the "camera roll" icon shows up, they will touch this and select the above image.
- The Airdropped image will be displayed on the digital whiteboard with the options to delete, rotate, fit height or fit width. Students will select the "fit height" option then tap on a white space on the screen to escape these options.
- Throughout these instructions, the educator will be modeling these steps using the "Airplay" option of the iPad through "Apple TV".
- Students will be encouraged to read the caption under the picture and discuss with a partner the message behind the image.
- During this time, the teacher will be helping any students who have not yet completed this step.
- As a class, the students will then read the caption under the picture and the teacher will model how to underline tricky words with the colour features in Educreations. Students will be shown how to change colours and how to underline words as well as how to erase the underlines. The decoding strategies of "chunk it out" and "slide through the word" will be addressed with words such as the student's name from the article (Caitlin Prater-Haacke) and the word (faculty). Also, the teacher will work with the students to unpack unknown vocabulary words such as "poses, sticky note, bullied, responded, posting, locker and faculty" by making connections and giving examples.
- Much attention will be given to the word "bullied" and a conversation will occur to unpack this term
- Students will be asked to keep this image in their mind and think about what the caption explained about this image. They will be asked to go to the main screen by pressing the reset button (note: the student's Educreations document will still be available when they go back into Educreations).

Part Four: Notes Section and Speak Feature (20-30 minutes)

- At this time, students will be asked to accept another Airdropped text. This time it will the actual newspaper article from the Toronto Sun (again accessible from the website above) that will appear in the students "notes section" in their iPad. The students will accept this drop by hitting "accept" and going into their notes section (which they will be directed) and select the "Anti-bullying article" in the titles listed on the left side of their iPad.
- Before the students read the article, a brief review and discussion about the following terminology will be discussed (i.e., bullying, anti-bullying, Facebook status update, respond, not necessarily dealt with, despite, positive nature, littering, punished, locker break-in, situation, community, campaign, received, take charge, investigating)
- At this time students will be taught how to use the "speak" feature of their iPad in the notes section. This is quite a long article and this feature would be recommended to the students who struggle with reading. They can use it as a "listen to reading" function. First students will hold down on the first word of the article and the option "Select All" will appear. The students will know if they have chosen the correction option because the text will become blue. At this time the options, "copy and speak" will appear. Students are to select the "speak" option and the text will be read to them. Students are encouraged to read along.
- If the students choose to read the text to themselves, they will use the decoding strategies outlined above and note any unknown words.
- When students have had the chance to read through the article several times, the teacher will direct the students to share with a partner or their table group the main idea of the article using specific details from the text to support their thinking.

Part Five: iBrainstorm (20 minutes)

- When students have had a chance to share with the group, every child who wants to share will have the option to do so. The teacher will record the student's ideas on the iBrainstorm app being displayed using Apple TV. Note for the teacher: ensure that you are recording similar ideas on the same colour sticky and different ideas on different colour stickies to help the students visually see the organization of their ideas while it is modeled. The teacher will also talk through how they are selecting the stickies and how they are changing the colour as the students will have the option to use this app in the next training lesson.
- The class will address such ideas as bullying, fairness, punishment (i.e., being reprimanded for littering), points of view, perspective taking
- Once all of the students have had the option to share, the teacher will take a screen shot of the ideas in iBrainstorm and airdrop it to the students for reference. This airdropped image will appear in the student's camera section.

Part Six: Critical Questioning (15 minutes)

- Finally, the students will be asked to think about the article that they read, the discussion that they had about the main idea of the article and the image with the caption that was saved to their Educreations page. Students will then be asked to go back into their Educreations page and look at the picture. The students will be asked the following critical question, "what does the sticky over Caitlin's mouth with the words, "you're beautiful" have to do with this situation that we read about?
- Students will have time with their table group and/or partner to discuss their inferences about what they feel this picture depicts.
- The class will be shown how to record their ideas in Educreations by pressing the record button. At this time, students can use the pen feature to highlight key words as they talk or simply orally respond to the critical question.
- After the students finishing recording their answers, they will press the pause button. This is a great button to address because if students need a chance to think or collect their thoughts, they can use this button to pause the dictation and then hit the record button to continue recording.

Part Seven: Saving Educreations Work (5 minutes)

- When the students are sure that their response is complete, they will press the DONE icon. At this time the students will be presented with the options to "Save Lesson or to Start Over". The students will select "Save Lesson". From there, they will have to enter a title for their response. Students should be encouraged to create a title that instantly lets the viewer know what their work is about. There is a second option for students to write a description of their work. They can include a brief description of their main idea or their response in writing.
- Once the student has written their title and description, they will touch the next button on the right-hand side of the screen. They will then have the option as to who can view this piece. The students are always encouraged to save it to "Private". Students will then choose the subject that the response belongs to and in this case they can pick "Language Arts" then hit SAVE.
- Students are then encouraged to copy the link to their critical response to save to Edmodo by touching their response image. By hitting this, students will be able to preview their response. Up in the right-hand corner there are several options for students to share their work (Facebook, Twitter, e-mail, or URL link). Students will select the link icon and hit "Copy Lesson Link".

Part Eight: Uploading Educreations Response to Edmodo (10 minutes)

- Finally, the students will log into their Edmodo account (previously set up for student homework earlier on in the year) and click the + icon to either create a note. Students will send this note to the entire class and write a brief message about what the class will see when they watch their

Educreations response. Next, the students will choose the "attach" option and click in the URL space. Two text bars will appear. The students will hold down their finger in the first text bar until the word "paste" appears. They will select the paste option. Following this, students will touch the second text bar and if they wait a moment, the title for their work will automatically appear. Students will then select the "Attach" option and then press send. At this time the student's work will be sent to all recipients in the class.

Part Nine: Metacognition Through Vlogging: (15 minutes)

- The final phase of the iPad training lesson will be Vlogging.
- Students will be coached through how to film themselves using the camera rotation feature.
- Once students have figured out the correct angle, they will be prompted to respond to questions using the following prompts:
  a) Today is DATE
  b) What I learned about Bullying today was …..
  c) The decoding strategies that I used to read were _____. These strategies will help me to become a better reader because ….
  d) The comprehension strategies I used when reading were_____. These strategies helped me to better understand the text because …
  e) One thing I learned about the iPad was ….

Note: Vlogging as this is an important skill that the students need to learn. Encourage the students to watch their Vlogs and reflect on what they said and what they learned.

Day 2: (Triple Literacy Block)

Lesson Focus:

- Decoding strategy: chunk it out and slide through the word
- Comprehension strategy: Making Connections, Inferring
- Issue: Bullying
- Overall message: Stand up for what you believe

iPad Focus: *Notes section (speak dictation and listen feature), Educreations, iBrainstorm, Effective Feedback through Edmodo, Comic Life*

Part One: Reviewing Day 1's work (15 minutes)

- Students will begin by watching their Vlog from the day prior to refresh their memory on their key learnings. Following this they will watch their Educreations and review the iBrainstorm class-sharing page saved in their images on the camera. Students may also review the post-it image with the caption and read over the article again. They will do this in preparation for today's training lesson. This may be done with a partner to share ideas and evaluate the message and main idea of this issue.

Part Two: Class Discussion of Issue (15 minutes)

- As a class, discuss the key learnings from Day 1's lesson making the ideas and learning transparent for the students. Review decoding and comprehension strategies using specific examples from the text and highlight key vocabulary words that were learned modeled through the app Comic Life. The teacher will create a page per term as listed below and have the class generate a working definition as to what the term means and what visual would be suite the term. Once two or three terms have been modeled, the teacher will have the student pairs select a term

from the list below (teacher will keep track of words chosen to ensure that all of the words were selected) to define and visually represent. This will make up the "Word Wall Literacy Board".
Terms: Bullying, Bully, Anti-bullying, Campaign, Positive Nature, Community, Littering, Investigating, Despite, Respond, Situation, Received, Outcome, Role Model, Speaking Out.

Part Three: Comic Life Vocabulary Development (15 minutes)

- Explain to the students that they will have the next twenty minutes to discover the "Comic Life" app while creating their "Word Art".
- Students will work together to upload images from Google images, add colour, design elements, take a picture of themselves, create a speech bubble and write the definition in their own words of the term they choose.

Part Four: Air Play (10 minutes)

- At the end of this working period, students will share their work using the Airplay feature on the iPads with the rest of the class.
- When it is time for a group to present their "Word Art", they will swipe upwards from the bottom of their iPad (as they had done when turn their Airdrop feature on) and select "Airplay". Students will select the classroom from the list provided and turn their airplay on by sliding over the bubble until it appears green. At this time their work will be displayed on the screen and students will connect how their work relates to the article from yesterday and what it represents.
- All Word Art will be uploaded to Edmodo by the students by taking a screen shot of the word art which will then be uploaded to Edmodo (follow Day 1 instructions for uploading)

Part Five: Feedback and Co-Constructed Criteria (15 minutes)

- In this chunk of the lesson, quite a bit of time will be spent discussing the idea of providing feedback. Students will be watching each other's Educreations responses from yesterday and providing each other feedback on Edmodo by responding to their note.
- As a class, we will use the teacher example created the day prior to critique and respond to it. Students will suggest what they felt the teacher had done well and what I need to improve on via oral discussion. The teacher will record these responses on the thread to the note in Edmodo. This will act as an exemplar to students to refer to over the course of the year.
- The class will discuss effective feedback (explicit comments on the structure, organization and ideas with concrete examples and suggestions for improvement) and ineffective feedback (e.g., it was good, add more detail, explain your thinking).

Part Six: Giving Feedback and Receiving Feedback on Edmodo (20 minutes)

- Students will be given the opportunity to watch a peer's Educreations response and provide effective feedback to that peer on Edmodo. The assessor, will use the class COPS (Capitalization, Organization, Punctuation, Spelling) method when providing this written feedback.
- After the students have provided their peer the feedback, they will sit down to discuss this descriptive feedback with their peer. Both students will benefit from this conference. The student who received the feedback will identify ways in which he/she can "rework the piece" or make the necessary changes, while the person who gave the feedback will understand how clear and effective their feedback is in order to bring about growth in their peer's work.

Part Seven: Rework the Piece (15 minutes)

- Students will have the opportunity to go back into Educreations and either re-record their response using their existing lesson or create a new lesson using the procedure outlined in

Day 1 for copying and pasting the newspaper image and caption in their picture section. Students will refer to the descriptive feedback given by their peer on Edmodo and address these areas needed for improvement in their modified version of their Educreations response. Students will save their new version and upload this to Edmodo using the same procedure as Day 1.

Part Eight: Metacognition Through Vlogging (15 minutes)

- As with the Day 1 training session, students will Vlog at the end of Day 2's training session using the focus prompts below.
  a) Today is DATE
  b) What I learned about giving feedback today was …..
  c) What I learned about receiving feedback today was ….
  d) Feedback will help my learning by …..
  e) In the app Comic Life, I learned to ….
  f) This was important for understanding words because ….
  g) The way I reworked my Educreations response based on the feedback I was given was ……..
  h) My biggest learning for today was …..
- If time allows, students will preview their Vlog, reflecting on what they had learned for the day.

Day 3: (Triple Block)

Lesson Focus:

- Decoding strategy: vowel sounds (two vowels go walking, the first one does the talking and diagraph blends e.g., ou, oa, ea, oo)
- Comprehension strategy: Making Connections, Similarities and Differences
- Issue: Bullying
- Overall message: Believe in yourself

iPad Focus: *Second Fiction, iBrainstorm, CompareNContrast*

Part One: Reviewing Day 2's work (10 minutes)

- Students will be encouraged to review the work from the day prior with a partner (Comic Life Word Art, Educreations Reworked Responses, Newspaper article and icon.

Part Two: Class Discussion (10 minutes)

- As a class, reiterate the key learnings from the day prior and what the learning goals will be for today (i.e., By the end of today, you will be able to compare and contrast two ideas from texts finding similarities and differences).

Part Three: 2nd Fiction (15 minutes)

- Students will be introduced to the reading comprehension app, "Second Fiction". They will be asked to go into this app and select the heading "Reading Comprehension"
- From here, the students will select the story, "Mike's New Glasses"
- Using the Daily Five strategy "Read to Someone" students will read this story with a partner checking for understanding as they read. Before the students go off to read this story together, the teacher will introduce two key reading elements from the bookmark strategies that are being used in the "Read, Record, Reflect" component, namely, reading with ***expression*** and ***fluency***. In

addition, students will be identifying the decoding and comprehension reading strategies they are using based on the "Strategy Bookmarks" and CAFÉ

- The teacher will model good and bad examples of expression and fluency (done and discussed separately). Students will work as table groups to construct the criteria for what it means to have good expression and good fluency based on the models. Throughout this discussion, the teacher will create a criteria checklist that will be available to the students as a hard copy located in an assigned place in the classroom and under the resource library section in Edmodo.
- As a class we will read the story together modeling good fluency and expression
- Students will then read "Mike's New Glasses" to their partner. During this "Read to Someone" time, students will practice good expression and fluency.

Part Four: Recording Reading (20 minutes)

- Once the partnership has been through the story together once and answered the comprehension questions all the while addressing the expression and fluency criteria, they will have a chance to record each other reading using the video camera feature of the iPad.
- As a class we will practice filming each other so that the iPad is steady and we are close enough to hear our partner read.
- Then the students will record each other reading with fluency and expression. For the students who might have difficulty with some of the words, they will be able to use the accommodation feature (word select) where they can touch the word and have the word spoken to them in turn repeating the word back.
- Once the first partner has recorded their peer reading, both students will watch this video with the fluency and expression criteria check list in front of them. Together the partnership will complete the checklist and come up with "Next Steps" as to how to improve their fluency and expression the next time that read.
- This process will repeat with the other partner.

Part Five: iBrainstorm Main Idea (20 minutes)

- After the partnership has completed the "Read and Record" portion of the Read, Record, Reflect component, they will work together on iBrainstorm (modeled on Day 1) to identify and record the main idea of this story. Encourage the students to make connections on other coloured stickies and organize them in such a way that if another group were to look at their iPad, they would understand what they have done.
- When students are completed their written work, they will invite another group to view their work and discuss their ideas. At this time, students will be able to give the group verbal feedback allowing them to create more clear and concise points.
- Students will add any additional ideas or examples needed to produce quality work and then upload their screen shot of iBrainstorm to Edmodo.

Part Six: Share Out Session on Apple TV (10 minutes)

- Using Apple TV to display student iBrainstorm work, students will be able to share their main idea of the fiction text, "Mike's New Glasses" and discuss any connections that were made.
- Once all of the students have had a chance to share, the teacher will direct the conversation towards connections that can be made between the Positive Post-it article and situation and Mike's New Glasses (if it already not gone this way). An emphasis will be on feelings, reactions and response.

Part Seven: Compare N Contrast (20 minutes)

- Students will now be directed to the app Compare and Contrast

- As a class review the terms "Compare and Contrast" and "Similarities and Differences". Unpack these terms to allow for a complete understanding between terms. Use the first example in the "Compare and Contrast" app (giraffe versus camel) to teach these terms as well as model this app. Students will help to identify similarities and differences between the giraffe and the camel.
- Once the students have a working understanding of comparing and contrasting and similarities and differences, it will be time to move on to the next task.
- The students will exit out of the CompareNContrast app for a moment to go onto Safari and do a Google image search for "glasses". Demonstrate for students how to use the image search to find pictures of various different objects and ideas. Students will be taught how to select and copy this image and save this image (Note: you cannot be on the Google image screen but rather have to touch the image first then hold your finger on the image to be able to choose the option of "Save Image". The image will now be saved in the camera roll section of the iPad).
- Once the image is saved, students are now ready to enter back into the CompareNContrast app.
- The students will select the "Create Your Own" option in this app. Once in this selection, they will tap on the "press to add a photo" in the first blue box. They will then go into their camera roll and select the Anti-bullying image saved from Day 1. Once this is done, students will tap on the "Press to add a photo" option in the second blue box. This time, students will select their image of glasses from the camera roll that they had copied from the Google search.
- By now, the students should have both images representing the text that they will be comparing and contrasting. The students will now create a title that depicts the essence of their work that they will be producing and put their name and the date in the "Name" box.
- Finally, students will use their own ideas, ideas discussed in class and ideas discussed with partners (as well as the ongoing collaboration that will occur during this time) to complete these text boxes based on the article and non-fiction story.
- As an accommodation for those students who have difficulty with writing, they can be taught to use the vocal dictation feature in the text box on this app (or all other apps featuring text boxes) to aid in their idea generation.
- Students will self-edit their work (based on criteria previously created in class and use COPS) as well have a partner read their work and offer feedback to ensure accuracy of ideas, detail of responses and clarity of work.
- When students have completed this process, they will upload their work to Edmodo and if time permits, provide written descriptive feedback to a peer who has already posted.

Part Eight: Metacognition Through Vlogging (15 minutes)

- Students will now Vlog about their learning using the prompts provided below:
  a) Today is <u>DATE</u>
  b) The decoding strategies that I used when I read Mike's New Glasses were
  c) The comprehension strategies that I used when I read Mike's New Glasses were …
  d) The main idea from the story, Mike's New Glasses was …
  e) Reading to Someone helped me by ….
  f) What I learned about fluency and expression were …. Which will help me to be a better reader by ….
  g) What I learned about comparing and contrasting was ….
  h) What I found difficult when comparing the Anti-bullying article and the story Mike's New glasses was ….
  i) What I found easy about comparing the two texts was…
  j) My biggest learning today was …
- All students will upload their Vlog to the class' private YouTube channel where they will save it to their own folder.

Day 4: (Triple Block)

Lesson Focus:

- Decoding strategy: chunk it out, slide through the word, alternate vowel and consonant sounds, vowel sounds (two vowels go walking, the first one does the talking and diagraph blends e.g., ou, oa, ea, oo)
- Comprehension strategy: Making Connections, Similarities and Differences
- Issue: Bullying
- Overall message: Believe in yourself, Strategies to Overcome Bullying

iPad Focus: Digital Literacies, Story Find, *Second Fiction, iBrainstorm, CompareNContrast, blogging website focus, Explain Everything*

Part One: Reviewing Day 3's work (10 minutes)

- Review Day 3's key learnings with a partner. Main idea of Mike's New Glasses, use of fluency and expression, connections made.
- Discuss key ideas as a class

Part Two: Introduce kids to website for anti-bullying-http://www.stopbullying.gov/kids/ (***20 minutes)***

- The students will be given the first 20 minutes to explore the website.
- While the students are going through the website, they are going to be encouraged to keep in mind what they have learned about bully and anti-bullying, the story about Caitlin, Mike's New Glasses and the comparative analysis between the stories.
- This 20 minutes is designated to discovering. At this time there will no writing, no graphic organizers, just thinking.
- Students will be asked to examine the videos, read the articles, read through the facts, play the bullying games and multimodally navigate through the site while being re-routed to other external educational sites that will further supplement the material
- As a class there will be a quick discussion as to how to get back to the original site if they find that they want to get back to the main menu. Also, students will be reminded as to how to copy text and paste it into the notes section of their iPad. This accommodation allows for students to use the "speak selection" feature in the notes section to have the text read to them while they read along.

Part Three: Share Out Session (15 minutes)

- As a class have students share information that they learned
- In a shared writing lesson, organize the shared information using Tools4Students using #10 Make Generalization graphic organizer. Display this using Apple TV
- After the class has completed two generalizations collaboratively, the teacher will link this graphic organizer to class Dropbox account for students to access the document.

Part Four: Accessing the Class Dropbox Account (20 minutes)

- The students will be guided through how to get on to the class Dropbox account. They will have the opportunity to log in. Once logged in, students will go into the apps folder. At this time they will open the "Tools 4 Students" folder. Once in this folder, the students will choose PDF's and then Graphic Organizer 10.
- Once the file comes up, the students will touch the "open with icon" which is the icon on farthest to the right at the top of the screen (arrow pointing down into a document). Here they will have the option to "print or open in". Students will choose the "Open in" feature. On the bottom there will be a list of apps to choose from. The students will be told that they can open this document

into Edmodo (which there will be times we do this); however, for the purposes of this lesson, students will be opening this document in "Explain Everything".

Part Five: Explain Everything Creation Period (40 minutes)

- Once the students have chosen to open the graphic organizer in "Explain Everything", this app will automatically pop up with the graphic organizer on the screen.
- The students will be asked to address the following criteria while in this app:
  a) write a brief description of the overall message from the website
  b) record a video addressing a key issue and strategies you would use to solve the issue (this can be done with a partner or your table group)
  c) record yourself explain what you included in your Explain Everything slide and why you chose to design your slide this way.
    - Students may choose up upload Google images, take quotes from the bullying article, the fictional story or from the website.
    - Students are encouraged to help one another discover and share their learnings with the people around them. If it is something from which the entire class will benefit, have the students locate the teacher and they will stop the class for the student to share out.
    - Have the students save their Explain Everything project to "Movie to Camera Roll". Once it is saved in the camera roll, students can upload their projects to Edmodo.
    - If time allows, students will start to provide feedback based on the criteria to their peers (however, this will be a key focus for Day 5).

Part Six: Metacognition Through Vlogging

- Students will now Vlog about their learning using the prompts provided below:
  a) Today is <u>DATE</u>
  b) The strategies that I used when on the bullying website were ….
  c) What I learned from the website was ……
  d) What I learned from using the app, Explain Everything was ….
  e) What I liked/did not like about this app was ….
  f) The connections that I can make for today are ….
  g) My biggest learning today is ….. this will help me ….
- All students will preview their Vlogs and upload them to their folder in the Private YouTube class channel.

<u>Day 5: (Triple Block)</u>

Lesson Focus:

- Decoding strategy: bookmark strategies
- Comprehension strategy: Making Connections, Inferring
- Issue: Bullying
- Overall message: Believe in yourself
- Critical Thinking Strategy: Rework the Piece

iPad Focus: *Explain Everything and KidsBlog*

Part One: Lesson Review (10 minutes)

- For the first ten minutes of class, the students will review their "Explain Everything" slide that they uploaded to Edmodo with the focus of adding anything, deleting anything or changing anything.

Part Two: Feedback and Evaluation (20 minutes)

- If the students are satisfied with their piece, then it will be open to critique. The class will examine each other's work and offer feedback. For those that want to change anything, they will put the sticky "work in progress" on their work and no student will be able to respond.

Part Three: Rework the Piece (20-30 minutes)

- Once the each student has responded to three of their classmates work, they will re-examine their own slide and identify design issues, look for areas needing modification and strengthen areas of which they are proud. In essence, the students will now receive a good chunk of time to "rework their piece".

Part Four: Publishing on KidsBlog (30 minutes)

- When the students have produced their best product according to their standards and the criteria outlined in Day 4, they will have the opportunity to publish their work to a wider audience.
- A mini-lesson will be taught about blogging including a discussion of what blogging is, examples we have seen thus far of blogging, relate it to our vlogging, the purpose of vlogging, the expectations of blogging and the purpose of blogging in our literacy program.
- Students will then be taught how to log-on to KidBlog. They will have some time to practice logging in and logging out as this skill required some time as shown through last year's pilot project.
- Once the students have had the chance to practice logging in and out, the process of publishing and creating posts will be modeled.
- Students will learn what they might include in a post and be shown how to post their "Explain Everything Slides".
- Finally, a review of publishing criteria and feedback will occur as to remind the students of the expectations.
- The class will attach a post to their slide and have a partner check over their work before posting. The teacher will also examine their work and approve it for the first couple of posts to ensure the students completely understand the expectations.
- Students will have the opportunity to respond to each other's posts. The teacher should require that one of the responses be to a peer for whom they had already provided feedback to their original slide so they can determine how they "reworked their slide" based on the feedback and respond as such.

Part Five: Global Responses (20 minutes)

- Once the students have responded to each other's posts, the class will do a Google search for anti-bullying blogs that they can respond to. This will give the students the opportunity to respond to a larger audience. They can tag their own URL blogging site when they respond in hopes that they get the Global communication running (baby steps).
- At the end of this writing session, students will be given the opportunity to share what they found through their search and what comments they left and why.

Part Six: Metacognition Through Vlogging (15 minutes)

- Students will now Vlog about their learning using the prompts provided below:
  a) Today is <u>DATE</u>
  b) What I learned about "reworking the piece" while using feedback was …
  c) What I found helpful about my peer's feedback was ….
  d) Connections that I can make about my Explain Everything slides and my peer's slides are ….
  e) Connections that I can make to my blog post and the blog posts that I found

during my Google search were ….

f) I need to focus on _____ in my writing. This will make me a better writer because …

- All students will review their Vlog then upload their Vlog to the class' private YouTube channel where they will save it to their own folder.

Training Week 2 Focus: in the first week the focus was on getting the students accustomed to the iPads, the various features, the integrated apps and developing 21st Century skills through multiliteracies and multimodalities. This week the focus is on introducing the students to the Integrated iPad Daily Five Literacy Program Components. Each day will bring the introduction of a new literacy component in which the teacher introduces the component, discusses its purpose and models the structure of the center through a shared lesson. There will be time after the shared lesson is complete for students to work on the task independently, with a partner or as a group with the teacher acting as a facilitator and mediator. This way, Vygotsky's (1978) gradual release of responsibility through scaffolding will allow the students to move from explicit instruction to implicit instruction. Teachers will be reviewing all of the same iPad features (as shown below) as last week throughout the components with the inclusion of *Photo Booth*.

⇒ Airplay
⇒ Airdrop
⇒ Notes section
⇒ Speak selection
⇒ Verbal dictation
⇒ Copying and pasting
⇒ Camera and video- Vlogging
⇒ Screenshot
⇒ App locator
⇒ Wi-Fi settings
⇒ Microphone settings
⇒ Apple TV

The teacher will also review the apps that the students were introduced to last week (as shown below) with the inclusion of:

⇒ Vocabulary/Spelling City
⇒ iMovie
⇒ Garageband
⇒ ReadNRespond
⇒ Puppet Pals

Last Week's Featured apps:

⇒ Educreations
⇒ CompareNContrast
⇒ iBrainstorm
⇒ Second Fiction
⇒ Tools4Students
⇒ Explain Everything
⇒ Comic Life
⇒ Dropbox
⇒ Edmodo
⇒ KidsBlog
⇒ Digital Texts

Day 6: (Triple Block)

Lesson Focus: Introductory to Guided Reading Component

- Decoding strategy: bookmark strategies
- Comprehension strategy: bookmark strategies
- Issue: Bullying
- Overall message: Believe in yourself
- Critical Thinking Strategy:

iPad Focus: *Airdrop, Airplay, Group blogging through KidsBlog, Video recording*

Part One: Introduction to Guided Reading (5 minutes)

- Teachers will explain the purpose of having a Guided Reading component in the Integrated iPad Daily Five Literacy Program and relate it to "Working with the Teacher" from the Daily Five. The biggest difference is the use of technology and all of the modalities related to the technology that they will be using. Give the students some specific examples of what they will be doing while at the Guided Reading component (i.e., reading and responding to texts using apps like Tellagami, Comic Life, Educreations, CompareNContrast, Tools4Students and a couple of new ones that we will be learning- iMovie and ReadNRespond; work on decoding and reading strategies including fluency and expression to become better readers; focus on important social justice issues and develop habits of mind to become better thinkers; focus on text forms and improve your writing by following proper text structure, including details in your writing and learning tricks and strategies for spelling and vocabulary; and have the one-on-one time and small group time with your teacher to work on specific areas that you need to improve).

Part 2: Group Set-Up (5 minutes)

- At this time, students will be asked to sit with a group of children (four in a group). The students in these groups will be at the same reading level and/or be working on the same reading strategies. The strategies of focus will be the bookmark strategies and the CAFÉ strategies.
- Once all students are sitting with their appropriate group in the proper location as explained by the teacher, they will be instructed to turn their "Airdrop" feature on, one group at a time. Each group will have a leveled text dropped to their notes section of their iPad with the same "Bullying theme" that they had been introduced to the week prior. (See attached for stories)

Part 3: Reading the Text (25-30 minutes)

- Groups will read their leveled text independently first and then as a group next. The teacher will have reviewed the decoding and comprehension strategies with each group that they want them to focus on. (Note: this is much different than a regular Guided Reading context. The reason for using this context is to get the students familiar with the layout of this component and the types of activities and features that will be included). The teacher at this point is walking around the room, listening to reading, scaffolding reading strategies, asking questions, etc.

Part 4: Critical Thinking Oral Responses (20 minutes)

- When the group has finished reading their bullying text, they will be instructed to read through the critical thinking questions that accompany the text and discuss them orally as a group paying attention to key details from the story and justifying their ideas as they go. A group member will set up one of the iPads to film the group's discussion so that the students can watch it back afterwards. The reason for this is to allow the students to attune to their own responses, see other responses and really reflect on the dialogue. All too often students are in the moment and forget what was said or what they said. This gives them a chance to review the discussion.

Part 5: Review of Discussion (20 minutes)

- The group will now have a chance to review their discussion that they had by watching the video back. As they are doing so, they can add additional items of interest, respond to each other's ideas and discuss how effective their group discussion was. This is a very powerful way to create discussion criteria and establish norms of collaboration with the group.

Part 6: Class Sharing Session (10 minutes)

- As the students complete this process, we will call the whole group back together and record the ideas of how to be an effective collaborative group during discussion. Students will also do a brief synopsis of their story and share the key ideas and learnings from their discussion session with the rest of the class. It is important to note that this is not a regular occurrence of the Guided Reading session and the students will be told that although they will be sharing and discussing as a group, there typically will be no "share out" with the class.

Part 7: Group Blogging (20 minutes)

- Based on the critical questions from their story, students are going to formulate a response to "what can be done about bullying" with their group. Students will use their ideas from the story, their discussion from the critical thinking questions the whole class sharing discussion and previous digital texts and multiliteracies components. The students will decide which of the group member's blog they will write from but title it from the group.
- Once the group has completed their entry, they will edit it accordingly and then go onto responding to other student's blogs.

Part 8: Metacognition Through Vlogging (10 minutes)

- As with all other sessions, students will Vlog with the focus on the following prompts:
  a) The decoding and comprehension strategies that I used when reading the text with my group were…
  b) These strategies helped me understand the text by ….
  c) The main idea of my text was…
  d) Discussing the critical thinking questions helped me better understanding the story by …
  e) What I learned from doing a group blog was ….

<u>Day 7: (Triple Block)</u>

Lesson Focus: Introductory to Read, Record, Reflect

- Decoding strategy: bookmark strategies, CAFÉ
- Comprehension strategy: bookmark strategies, CAFÉ
- Issue: Bullying
- Overall message: Anti-bullying
- Critical Thinking Strategy: Perform to Specs

iPad Focus: *Video Feature, Edmodo, YouTube, Raz-Kids, Puppet Pals*

Leveled Text options (bullying theme) from A-Z series

Level A-Z/PM	***Book Name***
C/3-4	Mongo and Cutie
D/5	Tadpole Teasing
D/6	Cat Corner: The Bully
G/11	Penny and the Rude Penguin
G/12	Troll Bridge
H/13	Bullying, No Way! Why People Help Each Other
H/14	Grounded to Earth
I/15	Tommy For President
J/16	I Want a Leopard
L/19	A Hero's Name
L/20	Every Dog Has His Day
M/21	The Sometimes Friend
N/22	Tommy and the Halloween Adventure
P/23	Eric the Bully
Q/23	The New Soccer Ball
Q/23	Mike Van Zee: Special Olympian
R/24	Turtle Tom
S/24	Wheeling the Snake
T/25	Bullying Hurts Everyone
U/26	Yellow Brick Roadies
V/27	The Gossip Monster
W/28	Scratching a Good Story

Part 1: Introduction to Read, Record, Reflect (10 minutes)

- As a class the teacher will review the "Read to Self, Read to Someone and Listen to Reading" behaviour from the Daily Five as these behaviours are replicated in the "Read, Record, Reflect" component, however, with a multimodal twist.
- After all the behaviours are reviewed, the students will be introduced to the RazKids app. They will learn how to log-on, select "Good Fit Books" and read the digital text. If they wish, they will also learn how to complete the quiz at the end of the story.

Part 2: Logging on to Raz-Kids (10 minutes)

- Once this has been reviewed, the students will be shown the list of books that have a bullying theme to them and will be encouraged to choose one of these books at their level to read so as to continue their learning about bullying and allowing them to make connections.

Part 3: Read to Self (15-20 minutes)

- On their iPad, students will independently select a book from the list provided to read to self. Students will be airdropped the "fluency and expression checkbric" for their reference to review prior to reading to self. Also, they will have their decoding and comprehension strategy bookmark available for their access on Edmodo. (Note: Unlike the Daily Five "Read to Self", where students have to be quiet while they read, in the Integrated iPad Read to Self Section, students are encouraged to read aloud and record themselves using the record feature in the Raz-Kids app. First you would think that the students cannot hear themselves when reviewing the recording afterwards; however, based on outcomes from the pilot project, because the students are so close to their own iPad, they can hear their voices quite clearly with only a murmur of other student's voices in the background. Secondly, some students may be distracted by everyone

reading different texts at the same time aloud; yet again based on pilot study outcomes, the students get quite used to this buzz and learn to tune it out.

- While attuning to the criteria, students will read their story while recording themselves reading, then review their audio recording. If they feel that they have met the criteria of fluency and expression and effectively used their bookmark strategies, they will then choose a partner to "Read to Someone".

Part 4: Read to Someone (20 minutes)

- As with the Daily Five, students will take turns reading their story to a partner, check for understanding as they go, offering coaching or time as needed and attuning to the fluency and expression criteria. Once the partners are finished, they will decide if each is ready to "record". If not, the partners will go back to "Reading to Self" and then repeat the process over again.

Part 5: Record (20-30 minutes)

- If the partners both agree that they are ready to move on, they will take turns recording each other reading using the video camera feature on the iPad.
- One partner will record the other reading their entire story and then both students will review the footage with the criteria checkbric in front of them to decide whether that student met the criteria. Together, the partnership will discuss what went well and what the student needs to work on and will fill in the next steps on the checkbric for that student. The process will then repeat for the other partner. Both students will upload their recorded reading session to their Private YouTube channel folder, titling it with the date, the book name and within their description, the reading strategies they used while reading and their next steps. The last session's recording will be reviewed every time the student participates in the "Read, Record, Reflect Component". This will be used for goal setting, metacognitive purposes and for assessment purposes.

Part 6: Puppet Pals (20 minutes)

- In order to check for understanding and solidify the main idea of the book, students will participate in a fun display of understanding.
- At this point, all students will be called to their desks to learn about the app Puppet Pals. A brief introduction will be given to the students with regards to the purpose of using this app and what the expectations are that need to be addressed (i.e., state the name and the author of the book, discuss main idea of the text, important key elements, over all lesson and any connections that could be made between texts or to other texts that have been used over the training period-written, digital, and visual, and critical design decisions). In terms of the design features and the graphic decisions (i.e., puppet to be used, background usage and how it is used to compliment the message of the book, use of props, additional characters, etc.) the creativity and discovery will be left up to the students. This is an important element because it gives students choice and allows for them to demonstrate their innovativeness, problem solving skills, collaboration, and critical thinking skills, not to mention their fluency with technology—all important literacy skills. Both students can decide to create a common presentation (especially convenient if they both read the same book) or they can decide to help each other create separate presentations.
- Students will work as a partnership to create their "play" using Puppet Pals.
- When they are complete, they will review their work and base it against the set criteria. They will make any necessary changes and then upload their work to a Public YouTube channel for a global response. Students will save the URL of their YouTube post and attach it to a note post in Edmodo outlining for their audience what they are about to see and the purpose of this clip.
- If time allows, students will watch each other's YouTube posts and provide descriptive feedback through Edmodo or in the comment section on YouTube. If there is not enough time, this will be

a key focus for the class when they go to the "Read, Record, Reflect" component the following week.

Part 7: Metacognition Through Vlogging (10 minutes)

- At this point all students will Vlog about their session learnings using the following prompts:
  a) The reading strategies that I used while reading to self and reading to someone were …. This will help me to become a better reader because ….
  b) What I saw my partner do which I will try is ….. I think this was good because ….
  c) The way watching myself read on video helped me is ….
  d) What I liked most about Puppet Pals was ….
  e) Using Puppet Pals can help me with my comprehension by …
  f) The biggest learning of the day for me was ….

<u>Day 8: (Triple Block)</u>

Lesson Focus: Introductory to Word Work

- Decoding strategy: bookmark strategies, CAFÉ
- Comprehension strategy: bookmark strategies, CAFÉ
- Issue: Bullying
- Overall message: Anti-bullying
- Critical Thinking Strategy: Perform to Specs

iPad Focus: *Notes Section, AirDrop, Tools for Students, Toontastic*

Part One: Introducing the Word Work Center (5 minutes)

- Teachers will explain the purpose of the Word Work component in the Integrated iPad Daily Five Literacy Program and relate it to "Word Work Center" from the Daily Five. However, there is a vast difference in its process. In Word Work for the Daily Five, students simply practiced their spelling or vocabulary words using different objects (i.e., play dough, bingo dabbers, etc.). Whereas in the Word Work component of the IIDFLP, students are going to be doing a lot more than just practicing their spelling and vocabulary words. Students will be taking their words and creating projects, creating apps, adding to existing apps, using these words in larger project-based learning scenarios and redefining what they know about words and how they are used. Students will be using the social justice theme (in this case the issue of bullying which is the basis for all other isms) and the terminology and words associated with these themes, important science and social studies based vocabulary and misspelled words in journals on blogs or in posts to propel the students 'word understanding, usage, reading, writing and spelling forward. Students will be told that they will be using apps such as: Vocabulary/Spelling City, Hideout and Phonics Genius (which features word families), Bitsboard (allowing students to make their own interactive flashcards with audio, video and text attached), Fotobabble and Comic Life (used to create a digital representation of their word), Educreations, Puppet Workshop, Puppet Pals, Toontastic, Book Creator, Story Kit and Tellagami.

Part 2: Identifying Important Vocabulary and Key Words From Video Clips (15 minutes)

- The students will then be asked to work as a group to watch the clips (URL's will be Airdropped to the students' notes section in their iPad so they can simply copy and paste it to the address tool bar for quick access) from the show "Parenthood" where the parents find out their daughter, Sydney is a bully when they had thought she was the one being bullied. The script will also be provided for the students to use as reference. While the students are watching this video, they

will be pausing it to discuss words that would relate to the bullying issue. The students will write these words down in the notes section of their iPad

- When the group has finished watching the video, they will read the script to see if there were any words that they had missed.

Part 3: Discussion of Vocabulary (15 minutes)

- After all of the groups have all had a chance to watch the video clips and create their list of vocabulary words, they will then discuss the meaning of each word and write a working definition beside the word in the notes section. Students can use "Word Ninja" or "Dictionary.com" if they are stuck with a meaning.

Part 4: Using these Words in a Narrative using Tools 4 Students and Toontastic (35 minutes)

- Using Airplay, students will be introduced to the app, Toontastic. The teacher will explain to the class that the students will be working as a group to turn their vocabulary words that they withdrew from the clips and the script into a story that explains these words. The teacher will go through the overall premise of the app but leave the discovery and design to the students. In terms of organization of their ideas, the students will use the Tools4Students graphic organizer #20 the Blank Story/Topic map to create their narrative script. All students will choose two to three words to be responsible for entering in the story. Therefore, all of the group members will be responsible for creating the plot of the story, while each individual student will be responsible for including their terminology word within the narrative.

Part 5: Toontastic Creation (35 minutes)

- Once the students have completed their graphic organizer using their vocabulary words and definitions within their script, they will go onto Toontastic and create the narrative. Only one iPad will be needed for this as the final product can be shared amongst group members.
- Final Toontastic narratives will be previewed to ensure that the students addressed the criteria (to include all of the terminology words and their definitions and were creative with their design) and make any necessary changes as need be. Similar tasks will be available at this component for students throughout the study to allow for a greater solidification for understanding, honing in on important thinking skills and having the opportunity to use vocabulary and spelling words in authentic contexts.
- All Toontastic narratives will be shared via Public YouTube, allowing for global feedback. As well, the link of the YouTube video will be posted by each student to his or her Edmodo Page for class feedback.

Part 6: Metacognition Through Vlogging (15 minutes)

- All students will reflect on today's session through a personal Vlog based on the following prompts:
  a) What I learned from getting the bullying vocabulary from the clips and the script was ….
  b) The process of turning the vocabulary words and the definitions into a script was …. because ….
  c) This will help me with my spelling and vocabulary words by ….
  d) My biggest learning today was ….

Day 9: (Triple Block)

Lesson Focus: Introductory to Strategy Identifier

- Decoding strategy: bookmark strategies, CAFÉ
- Comprehension strategy: bookmark strategies, CAFÉ
- Issue: Bullying
- Overall message: Anti-bullying
- Critical Thinking Strategy: Perform to Specs

iPad Focus: *Video Feature, Edmodo, YouTube*

Part One: Introducing the Strategy Identifier (5 minutes)

- Teachers will explain the purpose of the Strategy Identifier component in the Integrated iPad Daily Five Literacy Program and explain that it will include elements of all five Daily Five literacy centers at times. The main premise of the "Strategy Identifier" component is that students are always identifying their reading and writing strategies and reflecting on how these help them to become better readers and writers. Students will be involved in primarily reading and writing tasks with a product-based learning approach. There will be a key emphasis on critical and creative thinking development.

Part Two: Introduce students to RWR (10 minutes)

- Students will be directed to enter in the "RWR app"
- Using Apple TV, teachers will guide the students through this app. It is a much different app than what they are used to as this is an information app simply used to review reading and writing skills.
- Students should be instructed to read through the five "reflecting while reading" strategies. If the students have trouble reading these strategies, they can hit the speech bubble and it will read the text to the student.
- The students will be directed to choose one RWR strategy to reflect on after have read the passage. These RWR (Reading, Writing, Responding) strategies are directly aligned with the bookmark strategies and the CAFÉ strategies; therefore, simply reinforcing the strategies with which the students are already familiar.

Part Three: 2nd Fiction Reading (30 minutes)

- Once the students have had sufficient time to peruse the RWR app, they will be instructed to enter the 2nd Fiction app. This app has twenty different fictional stories based at the general grade two level (15-24). The app creator also offers a non-fiction app, which aligns with the Grade two social studies and science curriculum, as well as Kindergarten Fiction/Non-Fiction (level 3-8) 1st Fiction/Non-fiction (level 9-14), 3rd Fiction/Non-Fiction (level 25-28) and then the Grade 4 and 5 versions separate into Social Studies and Science. This series of apps will be used quite often at this center because of the ability for both the teachers and the students to create the lesson in this app (which is the feature we will be using today).
- Students will be asked to accept a text from Airdrop that deals with the topic "Cyber bullying". All text will be differentiated so students read text at their own independent reading level. Although the texts may be slightly different, the message and the task are the same for all of the students. Typically for this component, students of the same ability will be paired together so as to provide a collaborative sharing opportunity with the text. (See attached for Cyber Bullying text).
- After the students have accepted the text, they will copy the text by highlighting the text and choosing "copy", then open up the 2nd Fiction app, select "Guest", then "Create Your Own

Lesson". Once in "Create Your Own Lesson", students will press the + sign in the top right hand corner and write the title of the story which is "Cyber Bullying". Once that is done, students will hold their finger in the corner of the large text box and select paste. Now the Cyber Bullying story that has been shared to them through Airdrop, will appear in this text box.

- The students will be divided up into groups based on those who have the same text. This will allow for conversation of the text and reflection of main ideas.
- The students will first "Read to Self" and, then when ready, read the text as a group.
- As the group is reading the text, they will discuss what reading strategies they are using and what strategy they chose from the RWR on which to focus. (Students may go back to the RWR to review).
- Once the group has completed the text and the strategy discussion, they will discuss the main message of the story, make connections with all other media examining bullying that we has been provided and then move onto the critical thinking element of this app.

Part 4: Multiple Choice Question Make-Up (20 minutes)

- Students will spend the next twenty minutes creating multiple-choice questions with their group to test the understanding of the text. As a class, the teacher will model and explain multiple-choice questions and have students create sample questions using a simplified "Cyber bullying" text. This is quite a difficult skill for students at the primary level to do because it not only requires the students to understand the text but it also has them think critically about what possible other answers could potentially be correct and how they might create these options for their audience.
- The teacher will walk around and provide assistance to groups while encouraging collaboration and critical and creative thinking.

Part 5: Digital Photo (10 minutes)

- When students have completed the questions, they have the option of adding a digital photo. At this point students are going to collectively revisit the main idea of the cyber bullying text and decide what type of image would best suit the digital image for their story. This image will symbolize the main message and will have to incorporate the design element that the students have been working on all week. A couple of options for the students are to Google search images, take pictures and use Pic Collage to merge these images or use a graphic app such as "Graffiti Me" to add substance and definition to the image. This design piece will be left up to the students.

Part 6: 2nd Fiction Exchange (30 minutes)

- Once their questions and image is complete, students will have the chance to exchange iPads and read another groups' Cyber Bullying text (using the speaking selection feature for word recognition as an accommodation as need be) and complete their multiple-choice questions.
- Students will have the chance to provide the group oral feedback as well as descriptive feedback and should attempt to answer the following questions through their feedback on Edmodo or KidsBlog.
  a) How difficult were the multiple-choice questions?
  b) Did the questions and possible answers make sense?
  c) Did the group get at the main idea and the main events of the text?
  d) What image did the group use to represent the key message of the text? Why do you think they chose this? Did you feel that this was a good image to use? Why or Why not?

Part 7: Metacognition Through Vlogging

Day 10: (Triple Block)

Lesson Focus: Introductory to Work on Writing

- Decoding strategy: bookmark strategies, CAFÉ
- Comprehension strategy: bookmark strategies, CAFÉ
- Issue: Bullying
- Overall message: Anti-bullying
- Critical Thinking Strategy: Perform to Specs

iPad Focus: KidsBlog, iBrainstorm, 2nd Fiction

Part 1: Introduce Students to the Work on Writing Component (5 minutes)

- Teachers will explain the purpose of the Work on Writing component in the Integrated iPad Daily Five Literacy Program and explain that it will be similar to the Work on Writing from the Daily Five in that, students will work on writing piece based on the text forms we are doing in class; however, how this component differs from the Daily Five is that it incorporates multiliteracies and multimodal features. The students will be engaged in design and play through writing and literacy tasks. Students will be asked to reflect on writing strategies and ensure they are meeting the text form criteria while developing their critical thinking and creativity skills. The types of apps that will be used at this center will be *CompareNContrast, Tools4Students, Writer's Hat, Write About This, Toontastic, Educreations, Screen Chomp, Trading Cards, Sentence Builder, Story Kit, Book Creator, Bitsboard, iBrainstorm, Explain Everything, Comic Life, Notability and ReadNRespond. Websites will include EduGlogster and Read, Write, Think.*

Part 2: Comparative Analysis- Cyber Bullying vs. Bullying (iBrainstorm)- 40 minutes

- Students will be asked to revisit their Cyber Bullying text that they had been working on the day prior. They will be asked to re-read this text while simultaneously writing the main ideas and events on stickies in the app, iBrainstorm. Students will then revisit the other articles, digital pictures, games and websites that the students have worked with over the past two weeks and write down main ideas and events of specifically physical, verbal, social and emotion inequalities on stickies in iBrainstorm
- The students will then draw a Venn Diagram in their iBrainstorm slide and label one side Bullying and the other side Cyber Bullying.
- Students will then move their stickies within the Venn diagram to decipher the similarities and differences between Cyber Bullying and other types of bullying.
- Once this is complete, students will write a conclusive statement about what they learned about bullying.
- Students will edit their work for COPS and when they feel that it is to the best of their ability, they will screen shot this and upload it to Edmodo.

Part 3: Feedback on Edmodo- 20 minutes

- Students will now have the opportunity to examine their peer's work and offer feedback to their peers based on their ideas and organization using the Venn Diagram
- If students choose, they may go back and "rework their iBrainstorm" based on instantaneous student (and teacher) feedback
- As with all feedback sessions, students are responsible for providing feedback to three other peers' work.

Part 4: Steps to preventing bullying (Kid Blog)- ***35 minutes***

- A text form in the grade two program is Procedural Writing and so often educators teach the basics (i.e., how to tie your shoe, how to bake a cake, how to make a snowman), it is time for the procedures to have substance and be geared towards real issues that the students are studying and facing; therefore, this writing segment will be procedural in nature and be based on the topic *How to Stop a Bully, How to Not Be a Bully, Steps to Stopping a Bully, Steps to Take If You Are Being Bullied* or something along those lines. In other words, the students will follow a Procedural Writing Format (criteria list and graphic organizer will be Airdropped to the students) and all of the information that they have learned about bullying to blog about their procedure for standing up to bullies.
- Before a student can publish their work, they will have to self-edit and assess their work against the criteria as well as having a peer edit their work. When this process is complete, students will publish their procedure to KidsBlog and respond to their peer's blogs. They will also share their KidsBlog URL on the class twitter account to encourage feedback from a global audience using the hash tags, #antibullying, #nomorebullying, #peel21st, #bullying, #inspiring, #grade2, #betterfuture
- The class "21st Century Tech leaders" (as specific name given to technology leaders within a class) will keep track of responses on twitter and KidsBlog in order for students to keep up with the replies

Part 5: Metacognition Through Vlogging (20 minutes)

- Students are now ready to complete their sessional Vlog using the following prompts:
  a) The writing strategies that I used at this center were ….
  b) What I plan to do next time to be a better writer is ….
  c) iBrainstorm helped me organize my ideas about bullying by …
  d) I now understand …. about bullying because ….
  e) Writing the procedure of how to prevent bullying made me realize ….
  f) My biggest learning today was …..

Training Week 3 Focus: the focus for this week of training is to have the students work in the five components (for training purposes there will only be four components running with no Guided Reading, thus allowing the teacher to be freed up to trouble shoot or scaffold learning in order for it to run smoothly for the study). Students will be homogeneously grouped for reading abilities and rotate with their reading group through the components. This way the text will be the same within the group. Tasks for each group will be the same; however the text difficulty will differ from one group to the next. The final day will be used to review all of the components, review reading and writing strategies, manage Vlogs and blogs and provide feedback to peers, reply to the global audience and introduce the component tasks for the following week.

Week's Focus: Students will be working at each Integrated iPad Daily Five Literacy Program component on different parts of their project. The project for the week is to create a digital poster designed to promote "Anti-Bullying". The digital poster is the culminating task in acquiring the bookmark strategies with the focus on Bullying as the theme. Portions of this poster will be completed at each component throughout the week.

Day 11: (Triple Block)

Lesson Focus: Introduction to IIDFLP components and Student work at each component

- Decoding strategy: bookmark strategies, CAFÉ

- Comprehension strategy: bookmark strategies, CAFÉ
- Issue: Bullying
- Overall message: Anti-bullying
- Critical Thinking Strategy: Project-based learning

iPad Focus: included on descriptions below

Part 1: Introduction of Component Tasks (20 minutes)

- The teacher will introduce the students to each of the four component tasks (Read, Record, Reflect, Word Work, Strategy Identifier and Work on Writing)
- There will be time for students to ask questions after the teacher has reviewed the expectations, read through the instructions and reminded students of apps and features.

Part 2: Students will begin on component tasks (80 minutes)

- The students will move with their IIDFLP group to their focus component of the day. They will be responsible for completing their component as per the centers instructions and upload all work to Edmodo for accountability and assessment purposes as well as YouTube, KidsBlog or Twitter as instructed on the task. Students are engaged to collaborate with peers when needed and discuss ideas in order to complete the task accordingly.
- A description of all tasks for Day 11-14 is outlined below.

Part 3: Metacognition Through Vlogging (20 minutes)

- At the end of each session for Days 11-14, students will Vlog based on the prompts outlined on their task cards.
- These Vlogs will be uploaded to the student's private YouTube channel folder.

Day 12-14 (Double Block):

- This literacy block is the same as above however without the 20 minute introduction to the components. Instead, the literacy block will be shortened to a double block instead of a triple block (80 minutes instead of 120 minutes). Therefore, all component work sessions will be 60 minutes with a 20-minute vlogging session. This will be the same in the full study.

Day 15: Conclusion of Training Session (Triple Block)

Lesson Focus: the purpose of this session is to conclude all components, finish up all blogs, responses and feedback, complete and upload EduGlogster Posters and reflect on Vlogs choosing the top three that have demonstrated the most growth and learning.

iPad Focus: KidsBlog, Video Camera feature, EduGlogster, Edmodo, YouTube, Twitter

Part 1: Completion- (60 minutes)

- Students are going to be instructed to complete and post all tasks that were incomplete or needed some modification or reworking based on peer, teacher and audience feedback.
- This includes students going onto their KidsBlog, looking through posts, responding to feedback and adding or deleting required parts
- Next the students will reflect on their Edmodo posts look for areas that require improvement or responding to feedback
- Following this, students are going to edit their EduGlogster poster making sure it meets that criteria from each component and is designed in such a way that sends a clear message is demonstrates their personality and point of view in its design. This poster will then be uploaded

to YouTube with a description of the task and an invitation for feedback. This link will be tweeted out on the class site using the same hash tags from the Work on Writing task last week. As well, the link will be posted to Edmodo for peer and teacher feedback and assessment.

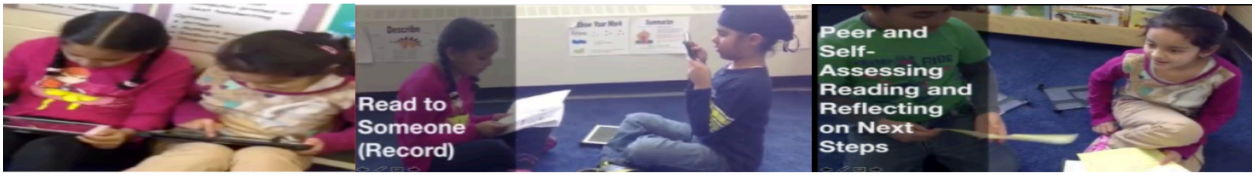
Part 2: Vlogging Organization (60 minutes)

- This final stage of training will require students to go into their YouTube folder on the private class account and watch all of their vlogging submissions making note of ones that addressed the criteria and demonstrated the greatest learning over the course of the three weeks. This criterion will be co-constructed in class and will be added to this document upon completion.
- Students will highlight their top three Vlogs by placing them in a separate folder entitled Name's Exemplary Vlogs for IIDFLP Training Session. These Vlogs will be revisited at the student-led conferences with parents, be assessed by the teacher and will provide the basis for future Vlogs.
- Students will post one final Vlog indicating their greatest learning over the past three weeks. At this point, the students will be able to speak freely about whatever they wish with respect to key learnings, bullying, reading and writing strategies, the IIDFLP and next steps with no set prompts. This Vlog will be added to the new folder housing the top three exemplary Vlogs and will be reviewed by the teacher.
- At this time all the training is complete and classes will be moving onto the study sessions of this program.

Sample Component Lessons:

Read, Record, Reflect Literacy Center

Read to Self, Read to Someone, Listen to Reading → **Read, Record, Reflect**



Apps/Websites That Support Read, Record, Reflect:

a) **iPad Apps:** Raz Kids, Mindmod Reading for Details, Kids Reading Comprehension, Light Sail, Audible

b) **Websites:** Tumble Books, One More Story, Storyline Online, Big Universe, Tarheelrea, Open Library, Meegenius, Mighty Book, Stories by Grade

c) Virtual Reality with Google

Instructions:

4. Go into the Learning A-Z Reading App 
5. Login to A-Z Reading
6. Username: XXXXXXX
7. Choose any of the yellow 2A shapes
8. Password: XXXX
9. Enter the Book Room and choose a book at your reading level from the list of "Bullying Books" (as we did last week).
10. Click the  to read the story
11. ***Read to Self:*** read the story over and over again until you feel that you are fluent and have great expression in your reading (refer to the checkbric)
12. After reading the story take the quiz by pressing 
13. ***Read to Someone:*** ask a partner to listen to you read. Remember to include your fluency and expression while you read. With your partner, check for understanding.
14. ***Record:*** when your partner agrees that you met the criteria, they will record you reading your book using the video camera feature on the iPad. After being recorded, you and your partner will fill out your checkbric and decide if you read fluently and with expression. Talk about what you will do next time to improve and what strategies you plan on using to help you. Fill this information out on the checkbric.
15. Now record your partner reading on the iPad and repeat step 11.
16. Watch your partner reading and complete the expression and fluency check-list reflection

17. Now that you have completed the both records and the checkbric, you are ready to go onto the last section.
18. **Puppet Pals:** using the app, *Puppet Pals* you will be creating a short play talking about bullying. Use the main idea of the book you just read, as well as everything you know about bullying that you have learned over the past two weeks to make connections.
19. This will be an instructional video (give your audience information) and help them understand bullying. You may choose to make this video independently or with your "Read to Some and Record" partner.
20. When choosing the background and props, make sure that what you chose helps to show the main message of bullying and what you are trying to teach. This digital play will be included in your EduGlogster poster so make sure the message is clear and accurate.
21. When you have completed the Puppet Pals play, you will edit and review your work making sure it is done so to the best of your ability and has met all criteria.
22. Like you did last week, you will now upload your Puppet Pals play to the Public YouTube channel. Make sure that you message is clear and tells the audience what they are about to see.
23. Copy the URL and past this into and Edmodo post for me to asses and your peers to give you feedback. You may also want to post the URL to our class Twitter account using the hash tags on the list on the front board.

Co-constructed Read, Record, Reflect Criteria

Expression:	*Yes/No*
Voice was loud.	
Voice was interesting and excited.	
Voice sounds happy.	
Expression made people want to listen to me read.	
Voice changes at punctuation (stops at periods, pause at commas, goes up at a question mark, excited and loud at exclamation mark)	
Voice shows the feelings of the book	

Fluency:	***Yes/No***
Reading has flow like you are talking (not like a R-O-B-O-T)	
Words have to slide together and not be chunky	
Read quickly not slowly	
Read for understanding	

Peer Comments: _____
_____

Next Steps:
_____

Reflection

Vlog:

- What bookmark strategies did you use while you read?
- How did these strategies help you in your reading?
- What was the main idea of your book?
- How can you connect to this story?

- How did using Puppet Pals help you to better understand the story?
- How are you planning on putting this video into your EduGlogster Poster?
- How could this increase people's understanding of bullying and the role they play in this issue.

Writing Workshop Literacy Center

EduGlogster Poster Design Centre:

Make sure you have your procedural writing criteria open and in front of you while at this Centre. You can either choose to open it up in Edmodo, KidsBlog or from your Language duotang. Like any good procedure, you will be using all of the elements that it includes (title, materials, procedures/steps, conclusion) to use in your EduGlogster Poster.

Instructions:

1. Last week, you had the chance to create a procedure of "How to Stop Bullying" that you posted to KidsBlog. You are going to take the next twenty minutes to read over your procedure and the feedback given from a global audience and "rework the piece". Make sure you look at the procedure writing criteria and the EduGlogster criteria before you begin.
2. You will now go into your EduGlogster app and attach your Procedure of How To Stop Bullying into your Poster. Use your design features that you want to make it your own.
3. At the "Work on Writing" component you are also going to add other written features as you see fit (i.e., titles, descriptions of work, captions to photos, etc.)
4. Remember to proofread all of your work and make sure it is done so to the best of your ability.
5. Finally, you will use the graphic organizer in Tools4Students (# 22 Blank 4 Rows) to write four bullying facts that you will include in your poster. You may refer back to the articles and stories that you have read, go back to websites or blogs that you have searched to help you to write your four bullying facts.
6. Find a place and way to attach these into your poster.

Co-constructed Feedback Criteria with the iPads

- needs to be positive and use kind words
- needs to be specific and detailed
- needs to include an example
- needs to follow proper COPS rules
- needs to explain what the person can do to improve
- needs to explain what the person did well

Examples of Level 4 Feedback:

- Your organization is perfect. You should include pictures in your work to support your idea.
- Most of your spelling is correct but you should go back and edit your work a little more (ex. "beleev" should be spelled "believed)
- I loved the part that …. You need to look over your writing because the part that says …. doesn't flow or make sense.
- In your writing you did a great job at telling the audience … but you need to include more detail by …and explain reasons why …. For example …

Vlog:

1. Give a brief summary of your poster to this point explaining some of the included features.
2. How are you including bullying information into your poster?
3. How are you planning on moving from your graphic organizer to your actual poster?
4. What writing strategies did you use while at this Centre?
5. How does an activity like this improve your understanding of bullying?
6. What are your next steps? Take-away's from this session?

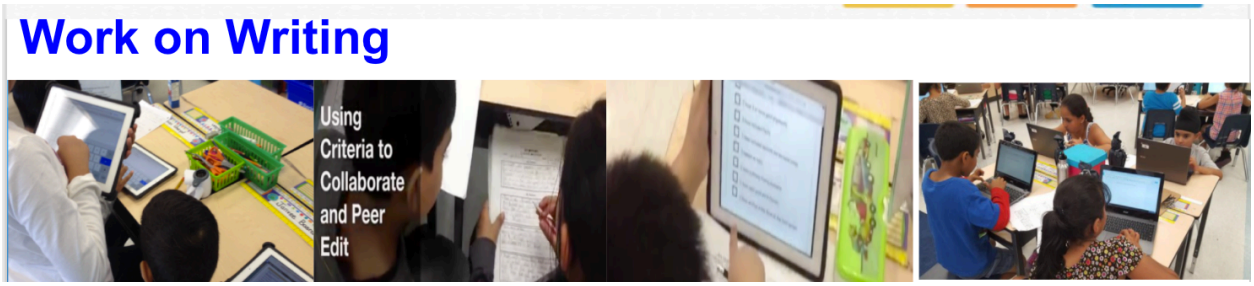
HyperDocs:

International Dot Day (Kindergarten)

ThinkLink Reports (Primary)

Explore-Explain-Apply (Junior)

Creative Writing Challenge (Primary/Junior)



Strategy Identifier Literacy Center

Before reading:

1. Before you read the text, review the meaning of the words, **bully, bullying, anti-bullying, campaign, change, difference, inspire, influence, self-esteem.**
2. Look through your five choices of types of bullying texts and decide which **one** you would like to read (i.e., cyber bullying, physical bullying, emotional bullying, social bullying, being the bully). Note: Each bullying type has three reading levels to suit your level. Choose the most appropriate one for you. You can decide to read independently or as a group.
3. Once you have chosen your topic, follow the expectations outlined below. Remember, while reading for information, use the strategies we have worked on in class (i.e., look at headings and subheadings, use visuals and diagrams for information, ask yourself questions, connect ideas, try and picture important ideas in your mind).
4. Also make sure you are using your comprehension and decoding strategies while you are reading the information.

Reading:

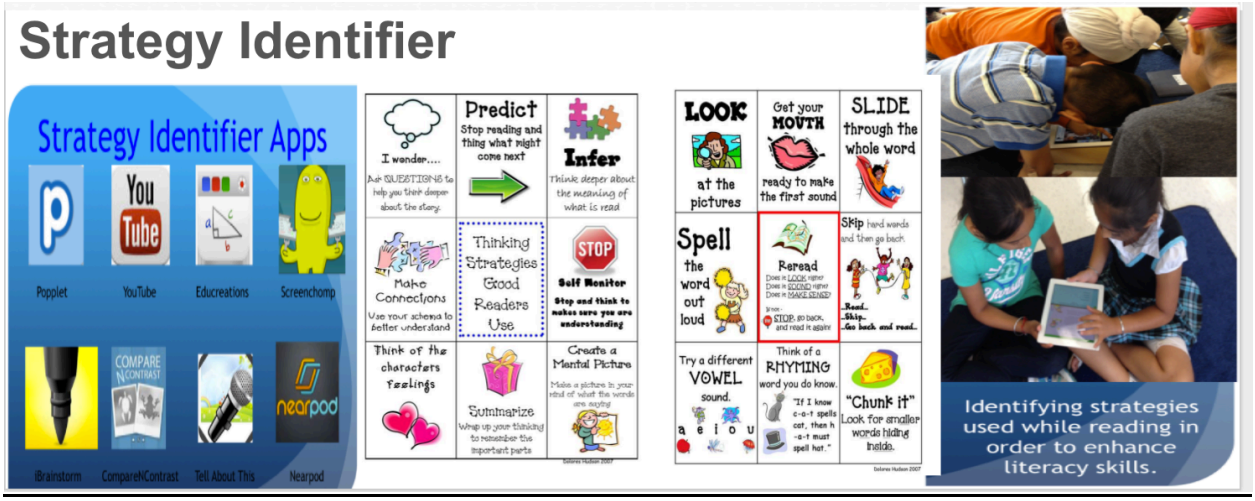
1. You may choose to copy your text to the "Second Fiction" app so that you have the accommodation of "vocal dictation and speak feature".

3. As a group, read the text and discuss the main idea

4. Pay attention to the vocabulary words that you were introduced to before reading.
5. You will now use the information you learned in the text to include in your "Poster" design. Where and how will you include this information? (For instance, you might have images of that type of bullying and images to stop it, you might write a description, use a poem, include a video, etc.).
6. Use the ideas of from your reading and extended research in your poster.
7. Using the Tools 4 Students app, choose a graphic organizer that would help you organize your thinking. You might want to try # 18 Plot Story Map or #20 Blank Story/Topic Map or #21 Blank 4-Column Topic Grid
8. Whichever graphic organizer you decide to use, record your ideas for the poster on the information from the text
9. Once finished, you will post your graphic organizer in Edmodo for assessment and begin to design your poster using your bullying focuses.
10. Vlog about key learnings and reading strategies used

Reflection:**Vlog:**

- How did discussing the key vocabulary before reading the text, help you with the text? What would you call this strategy?
- What bookmark strategies did you use to read the text? How did this help you understand the text?
- What strategies did you use to find the main ideas from the text?
- How did turning the text into parts of your poster help you to better understand the text?
- How will what you learned at strategy identifier today, help you when reading other texts?



1. Webquest
2. Flip Grid
3. Expeditions- VR

Word Study Literacy Center

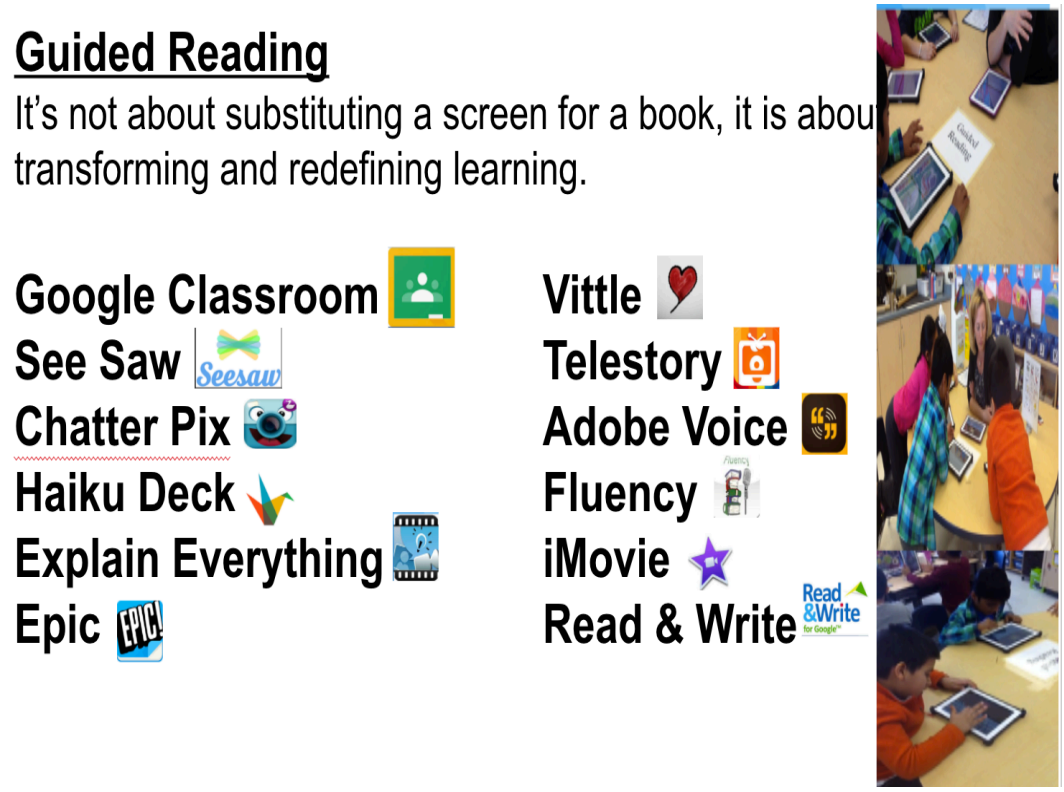
Instructions:

1. At word study center, you will be adding to your EduGlogster Poster by using the vocabulary words that pulled from the clips from Parenthood last week as well as the script. As a reminder, you wrote the meaning of these words and created a Toontastic animation teaching these words.
2. You are going to embed this video into your poster and use these words in some respect throughout your poster. You may wish to include the words and meanings in writing on your poster, use as a caption under a picture or use to describe a situation. However, you feel the words and meanings fit into your design is how you will include them.
3. When you have completed this task, and are satisfied with how you included these words in your Poster, you may choose to go onto the app, Vocabulary/Spelling City and create a new list of your vocabulary words. 

4. To do so you will go into Login and enter the username, "Ewart201" and the password, "2012014". Then on the left-hand side, it will give you the option to "Create New List". Select this option. It will take you to the menu page and again, you will "Create a New List". You will give the list a title with your name and a key idea from the list (i.e., Name's Bullying Vocabulary). After you have created the title you will choose the grade (Elementary). Following this, you will begin to write your vocabulary words, one per line, in the text boxes provided. It begins by allowing you to enter five words at a time. If you have more than five words you will select the 10 or 15 option. It will then give you the option to write your own sentences with your vocabulary words or use the ones provided. Finally, you are ready to play the games with your vocabulary words. Discover, explore and have fun!

Reflection:

- What did you learn at this center?
- What strategies did you use?
- How did this help you to better understand the bullying vocabulary?
- How will this help with designing your EduGlogster?
- What was difficult/easy about this center?
- How can you use what you learned at the word work center at other centers?
- What are your next steps?



Guided Reading Tasks

1. Kindergarten Inquiry (https://docs.google.com/document/d/1h7bPfvnSh5e2hl9Zd6WAmrB43PZ98Z2oQePFddXFWTA/edit
2. SketchNote- Primary- https://docs.google.com/document/d/12he_RhG_q9an8dlMxcXBQX6J-kQZDJ-Ivz3tip6x7-k/edit

3. **Six-Word Summary- Junior- https://docs.google.com/document/d/1a4aFZbRCuqFxa7jU0HFGdMquV6A0UHcjMq7w49lkq6k/edit**

Appendix C

Attributes of Current Literacy Programs

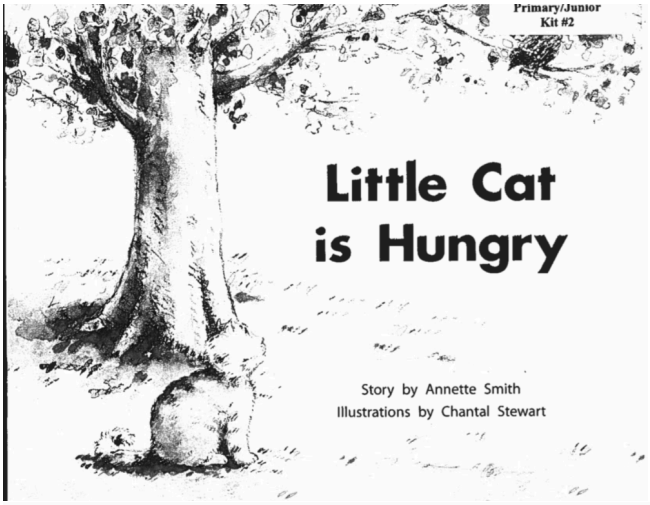
Literacy Instructional Program	Description	Design
Concept-Oriented Reading Instruction (CORI)	- An instructional program that merges reading strategy instruction, conceptual knowledge in science, and support for student motivation	- uses easy texts and phonics based texts - specific praise - goal oriented reading - gives students choices about what to read and with whom to read to - motivating environment - specific to grades K-3 - collaboration opportunities - scientific thematic units - engaged reading
Corrective Reading Programs	- A direct instruction program aimed at helping older struggling readers after other reading interventions have failed	- explicit step-by-step instructions are organized around decoding and comprehension which can be taught separately or together to customize instruction for particular students' needs - specific for students grade four and higher - teaches non-readers to grade seven skill level - good for students with poor attention, poor recall of directions and those who meet the requirements of special services
Learn to Read Programs	- An instructional program whereby preschool and early readers are learning the fundamentals of reading through sound- letter recognition	- -explicit instruction primarily geared towards decoding strategies - -includes phonemic awareness - -phonological awareness - -concepts about print - -consonant and diagraph blends - -simple comprehension strategies
The Daily Five	- An integrated literacy instructional and literacy behaviour management design to with five situated literacy tasks used to build literacy independence	- -five core literacy components that focus on writing, vocabulary and spelling, reading, oral communication and listening skills - -decoding and comprehension strategies taught through CAFÉ (Comprehend, Accuracy, Fluency, Expanded Vocabulary)

Appendix D

Corresponding Grade Level- PM Benchmark Framework Grade Level Averages (Nelson Education, 2010)

Grade Equivalent	PM Benchmark Level	Expected Time Frame (Grade Level/Month)
Kindergarten	1	K.1- Sept. Yr. 1
Kindergarten	2	K.2- June Yr. 2
1	3-4	1.1- Sept.
1	5-6	1.2- Oct.
1	7-8	1.4- Dec.
1	9-10	1.6-Feb.
1	11-12	1.8-April
1	13-14	1.9- May
1	15-16	1.10-June
2	17-18	2.1-Sept.
2	19-20	2.6- Feb..
2	21	2.10-June
2	22	2.10- June
3	23	3.1- Sept.
3	24	3.4-Dec.
3	25	3.7-Mar.
3	26	3.10- June
3	27	3.10- June
4	26	4.1-Sept.
4	27	4.4-Dec.
4	28	4.7-Mar.
4	29	4.10-June
5	28	5.1-Sept.
5	29	5.5-Jan.
5	30	5.10-June
6	29	6.1-Sept.
6	30	6.10-June

PM Benchmark Reading Assessment Level 4 Example (Nelson Education, 2010)



Level 4: Little Cat is Hungry—85 words

Page	Text
3	Here comes Little Cat.
	Little Cat is hungry.
	"Meow! Meow! Meow!"
5	Little Cat can see a lizard.
	The lizard is asleep
	on a rock.
7	Here comes Little Cat.
	The lizard wakes up.
9	Look at the lizard.
11	Little Cat can see a bird.
	The bird can not see Little Cat.
13	Here comes Little Cat.
	The bird sees Little Cat.
15	The bird is up in a big tree.
	Little Cat looks up at the bird.
	Little Cat is hungry.
	"Meow! Meow! Meow!"
16	"Here you are, Little Cat."

NELSON EDUCATION

Primary/Junior
Kit #2

PM BENCHMARK

Reading Assessment Procedure Card—Level 4
LITTLE CAT IS HUNGRY
Text Type: Narrative

Sit at a table or desk in a quiet space with the student. Put the student at ease.
Explain what is going to happen and why.
During this introduction, do not expand upon the content of the book.

Step 1 Picture/Book Walk

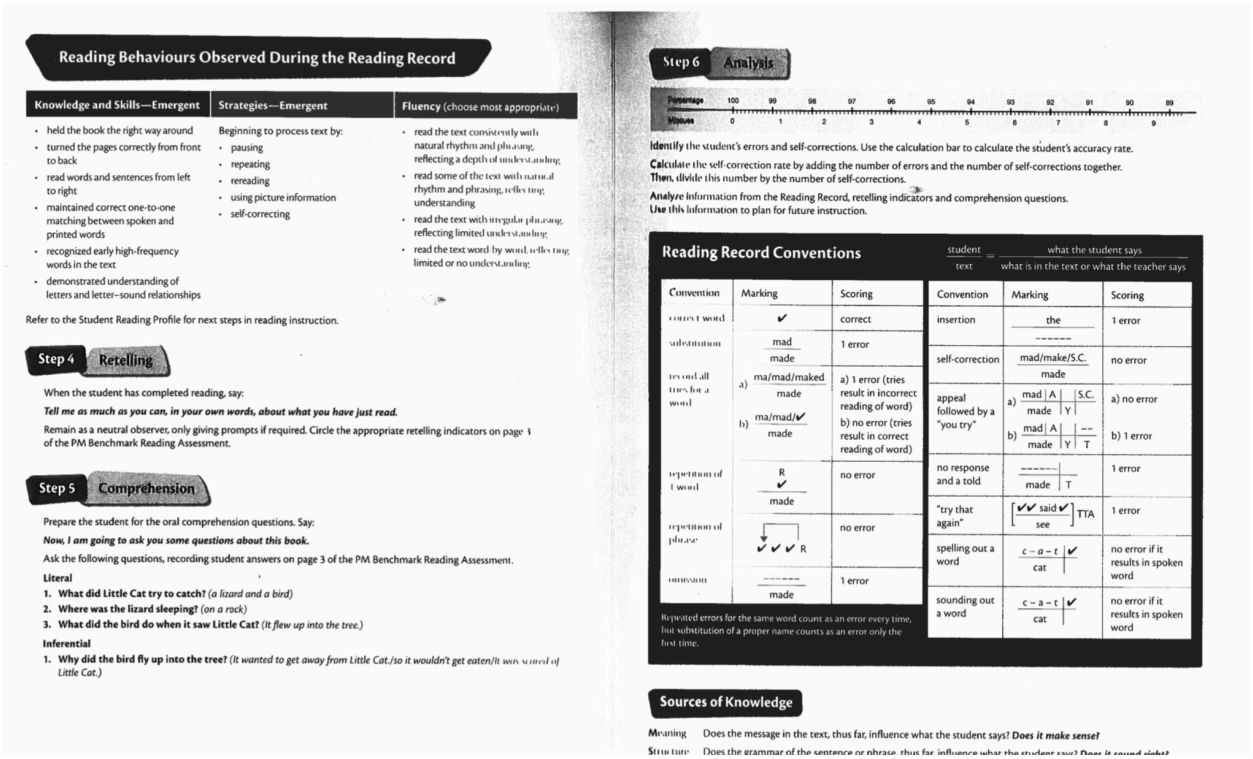
Read the title and orientation to the student.
This book is about a hungry little cat.
Give the student time to do an **independent** book walk, describing what is happening in the pictures.
Review the target vocabulary: **asleep, lizard, meow**

Step 2 Read to Self

Instruct the student to read the text to himself or herself quietly. Give the purpose for this reading:
Read to find out if Little Cat finds something to eat.
Give the student time to read the text independently. If the student asks for assistance while reading, say:
This is a time for you to read by yourself.

Step 3 Reading Record

When the student has completed reading the text independently, say:
I would like you to read the book to me.
Record accurate reading and miscues on the Reading Record. Use the Reading Record Conventions chart to help code the reading.



Reading Behaviours Observed During the Reading Record

Knowledge and Skills—Emergent	Strategies—Emergent	Fluency (choose most appropriate)
• held the book the right way around • turned the pages correctly from front to back • read words and sentences from left to right • maintained correct one-to-one matching between spoken and printed words • recognized early high-frequency words in the text • demonstrated understanding of letters and letter–sound relationships	Beginning to process text by: • pausing • repeating • rereading • using picture information • self-correcting	• read the text consistently with natural rhythm and phrasing, reflecting a depth of understanding; • read some of the text with natural rhythm and phrasing, reflecting understanding • read the text with irregular phrasing, reflecting limited understanding; • read the text word-by-word, reflecting limited or no understanding;

Refer to the Student Reading Profile for next steps in reading instruction.

Step 4 Retelling

When the student has completed reading, say:

Tell me as much as you can, in your own words, about what you have just read.

Remain as a neutral observer, only giving prompts if required. Circle the appropriate retelling indicators on page 3 of the PM Benchmark Reading Assessment.

Step 5 Comprehension

Prepare the student for the oral comprehension questions. Say:

Now, I am going to ask you some questions about this book.

Ask the following questions, recording student answers on page 3 of the PM Benchmark Reading Assessment.

Literal

1. **What did Little Cat try to catch?** *(a lizard and a bird)*
2. **Where was the lizard sleeping?** *(on a rock)*
3. **What did the bird do when it saw Little Cat?** *(It flew up into the tree.)*

Inferential

1. **Why did the bird fly up into the tree?** *(It wanted to get away from Little Cat./so it wouldn't get eaten/It was scared of Little Cat.)*

Step 6 Analysis

Percentage 100 99 98 97 96 95 94 93 92 91 90 89
Mistakes 0 1 2 3 4 5 6 7 8 9

Identify the student's errors and self-corrections. Use the calculation bar to calculate the student's accuracy rate.
Calculate the self-correction rate by adding the number of errors and the number of self-corrections together.
Then, divide this number by the number of self-corrections.
Analyze information from the Reading Record, retelling indicators and comprehension questions.
Use this information to plan for future instruction.

Reading Record Conventions

student / text = what the student says / what is in the text or what the teacher says

Convention	Marking	Scoring
correct word	✔	correct
substitution	mad / made	1 error
record all tries for a word	a) ma/mad/maked / made b) ma/mad/✔ / made	a) 1 error (tries result in incorrect reading of word) b) no error (tries result in correct reading of word)
repetition of 1 word	R ✔ / made	no error
repetition of phrase	✔✔✔ R	no error
omission	------ / made	1 error

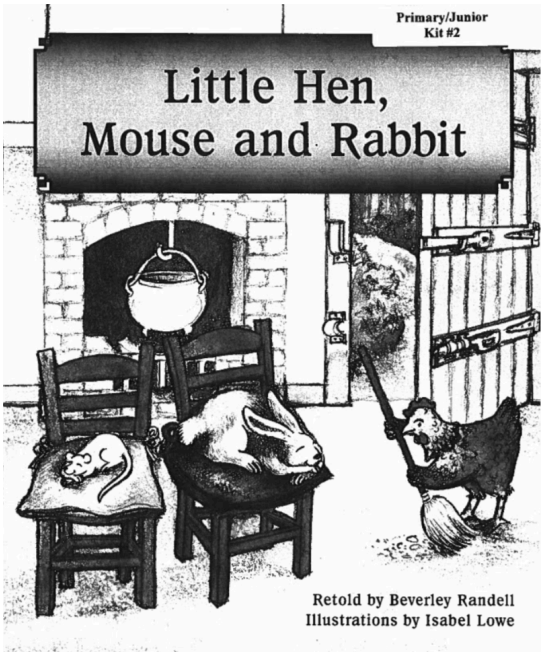
Repeated errors for the same word count as an error every time, but substitution of a proper name counts as an error only the first time.

Convention	Marking	Scoring
insertion	the / ------	1 error
self-correction	mad/make/S.C. / made	no error
appeal followed by a "you try"	a) mad | A | S.C. / made | Y | b) mad | A | -- / made | Y | T	a) no error b) 1 error
no response and a told	------ / made | T	1 error
"try that again"	[✔✔ said ✔ / see] TTA	1 error
spelling out a word	c – a – t | ✔ / cat	no error if it results in spoken word
sounding out a word	c – a – t | ✔ / cat	no error if it results in spoken word

Sources of Knowledge

Meaning Does the message in the text, thus far, influence what the student says? ***Does it make sense?***
Structure Does the grammar of the sentence or phrase, thus far, influence what the student says? ***Does it sound right?***

PM Benchmark Reading Assessment Level 14 Example (Nelson Education, 2010)



Level 14: Little Hen, Mouse and Rabbit—151 words

Page	Text
2	Little Hen, Mouse and Rabbit lived in a house by the woods. Little Hen did all the work in the house.
3	Mouse and Rabbit sat on their chairs all day long. They were lazy!
4	One morning, Little Hen went upstairs to make the beds. Mouse and Rabbit were asleep on their chairs. The door was open, and a hungry fox came in.
5	Fox pushed Mouse and Rabbit into his bag, and tied it up .
6	Fox ran off into the woods. His bag was heavy. He put it down on the ground. Then he went to sleep under a tree.
8	Little Hen came downstairs. Mouse was not there! Rabbit had gone, too! She ran into the woods to look for them.
9	Little Hen saw Fox, and she saw the bag. A tail was coming out of a hole in the bag!
10	Little Hen opened the bag, and Mouse and Rabbit climbed out.

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Primary/Junior
Kit #2

PM BENCHMARK

Reading Assessment Procedure Card—Level 14
LITTLE HEN, MOUSE AND RABBIT
Text Type: Narrative

Sit at a table or desk in a quiet space with the student. Put the student at ease.

Explain what is going to happen and why.

During this introduction, do not expand upon the content of the book.

Step 1 Picture/Book Walk

Read the title and orientation to the student.

This book is about a little hen that tricked a fox.

Give the student time to do an **independent** book walk, describing what is happening in the pictures.

Review the target vocabulary: **lazy, stones**

Step 2 Read to Self

Instruct the student to read the text to himself or herself quietly. Give the purpose for this reading:

Read to find out what happens to the little hen and the fox.

Give the student time to read the text independently. If the student asks for assistance while reading, say:

This is a time for you to read by yourself.

Step 3 Reading Record

When the student has completed reading the text independently, say:

I would like you to read the book to me.

Record accurate reading and miscues on the Reading Record. Use the Reading Record Conventions chart to help code the reading.

Reading Behaviours Observed During the Reading Record

Knowledge and Skills—Developing	Strategies—Developing	Fluency (choose most appropriate)
• concepts about print established • recognized the high-frequency words in the text • applied knowledge of letter–sound relationships to accurately decode some words	Beginning to process text by: • adjusting pace • predicting • attending to meaning • searching for print details • crosschecking to confirm • self-correcting	• read the text consistently with natural rhythm and phrasing, reflecting a depth of understanding • read some of the text with natural rhythm and phrasing, reflecting understanding • read the text with irregular phrasing, reflecting limited understanding • read the text word by word, reflecting limited or no understanding

Refer to the Student Reading Profile for next steps in reading instruction.

Step 4 Retelling

When the student has completed reading, say:

Tell me as much as you can, in your own words, about what you have just read.

Remain as a neutral observer, only giving prompts if required. Circle the appropriate retelling indicators on page 3 of the PM Benchmark Reading Assessment.

Step 5 Comprehension

Prepare the student for the oral comprehension questions. Say:

Now, I am going to ask you some questions about this book.

Ask the following questions, recording student answers on page 3 of the PM Benchmark Reading Assessment.

Literal

1. **At the beginning of the story, who did all the work in the house?** *(Little Hen)*
2. **What did Fox do to Mouse and Rabbit?** *(He pushed them into his bag and ran off into the woods.)*
3. **Why did Fox put the bag down on the ground?** *(The bag was heavy./He was tired./so he could have a sleep)*

Inferential

1. **Why was Fox able to catch Mouse and Rabbit?** *(They didn't hear him come in the house because they were asleep.)*
2. **Why did Little Hen, Mouse and Rabbit put stones in the bag?** *(to make Fox think Mouse and Rabbit were still in the bag)*

Step 6 Analysis

Identify the student's errors and self-corrections. Use the calculation bar to calculate the student's accuracy rate.

Calculate the self correction rate by adding the number of errors and the number of self-corrections together. **Then, divide** this number by the number of self-corrections.

Analyze information from the Reading Record, retelling indicators and comprehension questions.

Use this information to plan for future instruction.

Reading Record Conventions

$$\frac{\text{student}}{\text{text}} = \frac{\text{what the student says}}{\text{what is in the text or what the teacher says}}$$

Convention	Marking	Scoring
correct word	✔	correct
substitution	mad / made	1 error
record all tries for a word	a) ma/mad/maked / made b) ma/mad/✔ / made	a) 1 error (tries result in incorrect reading of word) b) no error (tries result in correct reading of word)
repetition of 1 word	R ✔ / made	no error
repetition of phrase	✔ ✔ ✔ R	no error
omission	------ / made	1 error

Convention	Marking	Scoring
insertion	the / ------	1 error
self-correction	mad/make/S.C. / made	no error
appeal followed by a "you try"	a) mad | A | S.C. / made | Y | ✔ b) mad | A | -- / made | Y | T	a) no error b) 1 error
no response and a told	------ / made | T	1 error
"try that again"	[✔✔ said ✔ / see] TTA	1 error
spelling out a word	c – a – t | ✔ / cat	no error if it results in spoken word
sounding out a word	c – a – t | ✔ / cat	no error if it results in spoken word

Repeated errors for the same word count as an error every time, but substitution of a proper name counts as an error only the first time.

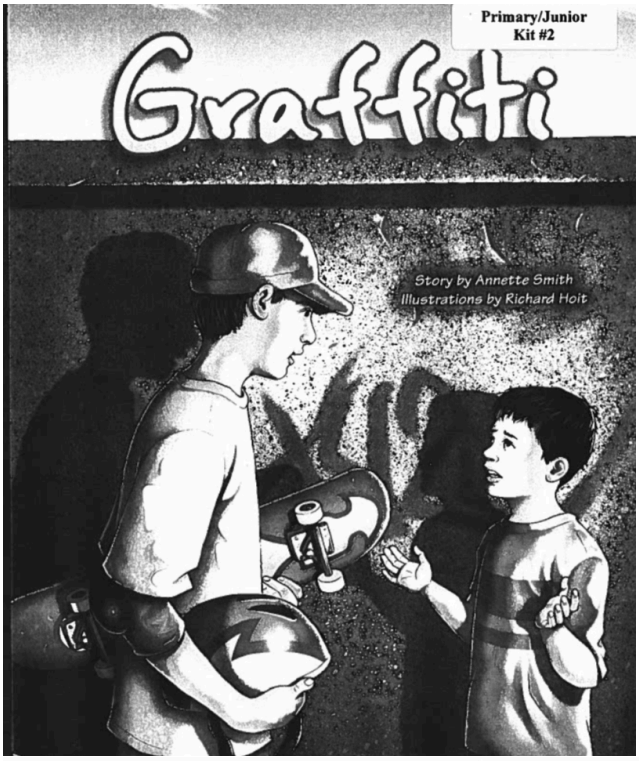
Sources of Knowledge

Meaning Does the message in the text, thus far, influence what the student says? ***Does it make sense?***

Structure Does the grammar of the sentence or phrase, thus far, influence what the student says? ***Does it sound right?***

Visual Does the print information (seeing and hearing) influence what the student says? ***Does it look right?***

PM Benchmark Reading Assessment Level 24 Example (Nelson Education, 2010)



Level 24: Graffiti—247 words

A small crowd of children gathered as soon as Kurt Harrison arrived at the skatepark.

Kurt was their hero. Everyone admired his skill as he rode effortlessly up and down the ramps and performed very difficult flip-tricks. "That was great, Kurt," yelled Matt, "but come over here and look at this! Someone's sprayed graffiti on the side of the skate bowl."

Kurt leapt off his board and went over to inspect the damage. "Do any of you know anything about this?" he asked the children. They all shook their heads except one boy who was standing at the back of the group. He was shuffling his feet and looking awkward.

Kurt took the boy aside and said to him, "You're new to this area, aren't you?"

"What's it got to do with you?" the boy muttered with a sneer.

"I haven't seen you here before," replied Kurt, "and if you want to learn some skateboard tricks, I can help you. I've even got an extra board you can borrow."

"Really?" the boy asked, looking astonished.
"Yes," said Kurt. "But first, do you know anything about the graffiti?"

"Will I get into trouble?" whispered the boy.
"If you tell me the truth you won't," replied Kurt.
"I did it," admitted the boy.

"I thought so," said Kurt. "I'll help you clean it off when everyone has gone home, but you must promise never to do it again."

"I promise," said the boy, giving a big sigh of relief.

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NELSON EDUCATION

Primary/Junior
Kit #2

PM BENCHMARK

Reading Assessment Procedure Card—Level 24
GRAFFITI
Text Type: Narrative

Sit at a table or desk in a quiet space with the student. Put the student at ease.
Explain what is going to happen and why.
During this introduction, do not expand upon the content of the card.

Step 1 Picture/Book Walk

Read the title and orientation to the student.
This card is about two boys, Kurt and Matt, who find some paint sprayed on the walls of the skateboard park.
Give the student time to do an **independent** book walk, describing what is happening in the pictures.
Review the target vocabulary: **bowl, graffiti, skate, skateboard**

Step 2 Read to Self

Instruct the student to read the text to himself or herself quietly. Give the purpose for this reading:
Read to find out how Kurt solves the problem.
Give the student time to read the text independently. If the student asks for assistance while reading, say:
This is a time for you to read by yourself.

Step 3 Reading Record

When the student has completed reading the text independently, say:
I would like you to read the card to me.
Record accurate reading and miscues on the Reading Record. Use the Reading Record Conventions chart to help code the reading.

Reading Behaviours Observed During the Reading Record

Knowledge and Skills—Extending	Strategies—Extending	Fluency (choose most appropriate)
• Automatically recognized high-frequency words in the text • Accurately decoded most text-specific vocabulary	Able to process text effectively by: • adjusting pace to text type, or text difficulty • predicting • attending to meaning • searching for print details • crosschecking to confirm • self-correcting	• read the text consistently with natural rhythm and phrasing, reflecting a depth of understanding • read some of the text with natural rhythm and phrasing, reflecting understanding • read the text with irregular phrasing, reflecting limited understanding • read the text word-by-word, reflecting limited or no understanding

Refer to the Student Reading Profile for next steps in reading instruction.

Step 4 Retelling

When the student has completed reading, say:

Tell me as much as you can, in your own words, about what you have just read.

Remain as a neutral observer, only giving prompts if required. Circle the appropriate retelling indicators on page 3 of the PM Benchmark Reading Assessment.

Step 5 Comprehension

Prepare the student for the oral comprehension questions. Say:

Now, I am going to ask you some questions about this card.

Ask the following questions, recording student answers on page 3 of the PM Benchmark Reading Assessment.

Literal

1. **Who sprayed the graffiti on the side of the skate bowl?** *(the boy)*
2. **What did Kurt offer to lend the boy?** *(his spare skateboard)*

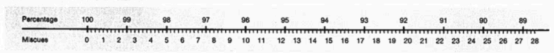
Inferential

1. **How did Kurt know the new boy could have sprayed the graffiti on the skate bowl?** *(He shuffled his feet and looked awkward./He looked guilty.)*
2. **Why did the boy finally admit that he had sprayed the graffiti on the skate bowl?** *(He didn't want to get into more trouble./He realized he had to tell the truth.)*
3. **Why did the boy whisper when he asked Kurt if he would get into trouble?** *(He didn't want the other children to hear.)*

Applied Knowledge

1. **Why didn't Kurt get angry with the boy?** *(The boy was being honest./Kurt wanted to help the boy./The boy might have run away if Kurt had been angry.)*

Step 6 Analysis



Identify the student's errors and self-corrections. Use the calculation bar to calculate the student's accuracy rate.

Calculate the self-correction rate by adding the number of errors and the number of self-corrections together. Then, divide this number by the number of self-corrections.

Analyze information from the Reading Record, retelling indicators and comprehension questions. Use this information to plan for future instruction.

Reading Record Conventions

$$\frac{\text{student}}{\text{text}} = \frac{\text{what the student says}}{\text{what is in the text or what the teacher says}}$$

Convention	Marking	Scoring
correct word	✔	correct
substitution	mad / made	1 error
record all tries for a word	a) ma/mad/maked / made b) ma/mad/✔ / made	a) 1 error (tries result in incorrect reading of word) b) no error (tries result in correct reading of word)
repetition of 1 word	R ✔ / made	no error
repetition of phrase	✔ ✔ ✔ R	no error
omission	------ / made	1 error

Repeated errors for the same word count as an error every time, but substitution of a proper name counts as an error only the first time.

Convention	Marking	Scoring
insertion	the / ------	1 error
self-correction	mad/make/S.C. / made	no error
appeal followed by a "you try"	a) mad | A | S.C. / made | Y | b) mad | A | -- / made | Y | T	a) no error b) 1 error
no response and a told	------ / made | T	1 error
"try that again"	[✔✔ said ✔ / see] TTA	1 error
spelling out a word	c – a – t | ✔ / cat	no error if it results in spoken word
sounding out a word	c – a – t | ✔ / cat	no error if it results in spoken word

Sources of Knowledge

Meaning	Does the message in the text, thus far, influence what the student says? ***Does it make sense?***
Structure	Does the grammar of the sentence or phrase, thus far, influence what the student says? ***Does it sound right?***
Visual	Does the print information (seeing and hearing) influence what the student says? ***Does it look right?***

Appendix E

Informed Consent

Literacy Program Investigation
Parental Consent Form

Date: August 2014
Study Name: Technological Literacies: Enhancing Student Engagement, Reading Comprehension and Reading Skill Development in the Classroom

Researchers: Keri Ewart Doctoral Student, Faculty of Education, York University, Grade Two Teacher, Sunshine Public School
J.S, Grade Two Teacher, Sunshine Public School
A.R, Grade Two Teacher, Sunshine Public School

Purpose of the Research: Research supporting claims about the educational benefits of using the iPad as a teaching and learning tool in the elementary classroom lack the definitive findings proving that the use of the iPad is directly associated with skill development and reading gains, often drawing either on anecdotal evidence, or derived from small-scale and short-term studies. As a result, we still know little about whether these benefits transfer to other real world contexts or persist over any length of time beyond the programming and evaluation session. The proposed research study will address this gap between claims and evidence and seek to clearly connect the use of iPads as a teaching and learning tool in literacy programs to learning outcomes through a 24-week study comparing two literacy contexts: one which includes the use of the iPad as a teaching and learning tool and one which does not.

What You Will Be Asked to Do in the Research: As a participant in this study, your child will be participating in two literacy programs with the rest of his/her classmates as part of our regular in-class programming. One of the literacy programs is the *Critical Reading Literacy Program* (CRLP) and involves students developing reading and comprehension skills through five vital components (Read to Self, Read to Someone, Work on Writing, Word Work and Listen to Reading). The other literacy program is the *Enhanced Integrated iPad Literacy Program* (IiLP) which is an extension of the CRLP with the inclusion of the iPads and integrated apps in all components of the program. We will be particularly focusing on the difference between reading strategies and comprehension when in the Critical Reading Literacy Program as compared to the inclusion of the iPad in all literacy tasks as with the Enhanced Integrated iPad Literacy Program. When the study begins, your child will be asked to fill in a short, anonymous survey about her/his motivation to read and their use of technology. We will also be asking **you** to complete an anonymous survey about your child's reading activity levels and your opinions on and experience with technology. Your child will then be asked to complete a diagnostic pre-test assessing his/her reading and comprehension level. When the CRLP session is finished, your child will be invited to take a post-test reading assessment to gauge his/her reading gains as a result of the CRLP. At this time your child will receive training in the IiLP and at the completion of the training, your child will again participate in a diagnostic pre-test to serve as a base-line to determine improvement in reading skills at the completion of the program. Following the IiLP session, your child will be invited to take a post-test reading assessment to determine what reading gains, if any, resulted due to the use of the iPads. Your child may be audio-visually taped during the literacy sessions. Finally, at the conclusion of the study both your child and yourself will be asked to answer interview questions again pertaining to reading and technology, helping me to gauge the effectiveness of both literacy programs.

Risks and Discomforts: We do not foresee any risks or discomfort from your child's participation in the research.

Benefits of the Research and Benefits to You: Your child will have the opportunity to develop reading skills (decoding and comprehension) and reading strategies as well as critical thinking skills in a safe, controlled, and free environment. Potential benefits of the research for your child include: advanced literacy skill development including fluency, expression, oral communicative skills, and increased reading ability.

Voluntary Participation & Withdrawal from the study: Your child's participation in the study is completely voluntary and he/she may choose to end his/her participation at any time, for any reason. If your child refuses to participate or chooses to withdraw from this study, his/her decision will not affect their relationship with the researchers/teacher, the school, or any other group associated with this project. In the event your child withdraws from the study, all associated data collected will be immediately destroyed wherever possible.

Confidentiality: Images and information used in research/report writing will be confidential. Also, your child's name or any personal information will not appear in any report or publication of the research. Data about your child's literacy development will be collected by your child's classroom teacher, and all research data will be safely stored on a secure server at York University. Your child will be assigned a randomized user name and password to ensure his/her real name does not appear in the data. The research data will only be used by the research team and by Keri Ewart's dissertation committee. After the conclusion of the study in 2016, data will be stored for five years and then destroyed. Confidentiality will be provided to the fullest extent possible by law. Any paper copies of records such as signed consents will be maintained in a locked cabinet in the locked files of Keri Ewart.

Questions About the Research? If you have questions about the research in general or about your child's role in the study, please feel free to contact Keri Ewart either by telephone at (XXX) XXX-XXXX, extension XXX or by e-mail (xxxxxx@xxx.com). This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and the Peel District School Board's Ethics Review Committee and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone (XXX) XXX-XXXX or e-mail xxxxxx@xxx.com).

Legal Rights and Signatures:
I_____, consent that my child may participate in *Technological Literacies,* conducted by Keri Ewart. I have understood the nature of this project and wish for my child to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature_____ **Date**_____
Participant's Parent/Guardian/

Signature_____ **Date**_____
Principal Investigator

For research-purposes only, I consent to
- ☐ Being video taped
- ☐ Being interviewed
- ☐ Answering a survey
- ☐ Having my photo taken

Literacy Program Investigation
Parental Consent Form – Parental Involvement

Date: August 2014
Study Name: Technological Literacies: Enhancing Student Engagement, Reading Comprehension and Reading Skill Development in the Classroom

Researcher: Keri Ewart, Doctoral Student, Faculty of Education, York University, Grade Two Teacher, Sunshine Public School
Teachers Implementing the Research Literacy Program:
J.S, Grade Two Teacher, Sunshine Public School
A.R, Grade Two Teacher, Sunshine Public School

Purpose of the Research: Research supporting claims about the educational benefits of using the iPad as a teaching and learning tool in the elementary classroom lack the definitive findings proving that the use of the iPad is directly associated with skill development and reading gains, often drawing either on anecdotal evidence, or derived from small-scale and short-term studies. As a result, we still know little about whether these benefits transfer to other real world contexts or persist over any length of time beyond the programming and evaluation session. The proposed research study will address this gap between claims and evidence and seek to clearly connect the use of iPads as a teaching and learning tool in literacy programs to learning outcomes through a 24-week study comparing two literacy contexts: one which includes the use of the iPad as a teaching and learning tool and one which does not.

What You Will Be Asked to Do in the Research: As a participant in this study, you will be asked to fill in a short, anonymous survey at the commencement of the research about your own reading involvement and literacy oriented questions pertaining to your child's reading ability and reading engagement. This will allow us to have a better understanding of your child's and your literacy experience. You will also be asked to complete a short technology usage survey, which will shed insight into your child's familiarity with technology and iDevices, in addition to the availability of technology in the home. Finally, at the conclusion of the study you will be asked to answer interview questions again pertaining to reading and technology, helping us to gauge the effectiveness of both literacy programs.

Risks and Discomforts: We do not foresee any risks or discomfort from your participation in the research.

Benefits of the Research and Benefits to You: You will have the opportunity to have access to your child's current reading developments as well as learn of reading strategies that will better equip you in helping your child be a more successful reader and thinker.

Voluntary Participation & Withdrawal from the study: Your participation in the study is completely voluntary and you may choose to end your participation at any time, for any reason. If you refuse to participate or chooses to withdraw from this study, your decision will not affect yours or your child's relationship with the researchers/teacher, the school, or any other group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Confidentiality: Digital video and information used in research/report writing will be confidential. Also, your name or any personal information will not appear in any report or publication of the research. All research data will be safely stored on an external, password protected harddrive that will be stored in a locked cabinet in Keri Ewart's home. You will be assigned a randomized user name and password to ensure your real name does not appear in the data. The research data will only be viewed by the research team and by Keri Ewart's dissertation committee. After the conclusion of the study in 2016, data will be stored for five years and then destroyed. Confidentiality will be provided to the fullest extent possible by law. Any paper copies of records such as signed consents will be maintained in a locked cabinet in the locked files of Keri Ewart.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact Keri Ewart either by telephone at (XXX) XXX-XXXX, extension XXX or by e-mail (xxxxxx@xxx.com). This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and the Peel District School Board's Ethics Review Committee

and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone XXX-XXX-XXXX or e-mail xxxxxx@xxx.com) and the York University graduate program in Education (XXX) XXX-XXXX.

Legal Rights and Signatures:
I_____, consent to my participation in *Technological Literacies,* conducted by Keri Ewart. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

For research-purposes only, I consent to

- ☐ Being video recorded
- ☐ Being interviewed
- ☐ Answering surveys
- ☐ Having photographs taken
- ☐ Having photographs used for publication

Signature_____ **Date**_____
Participant

Signature_____ **Date**_____
Principal Investigator

Literacy Program Investigation
Minor Assent Form

Date: March 2015
Study Name: Technological Literacies: Enhancing Student Engagement, Reading Comprehension and Reading Skill Development in the Classroom

Researchers: Keri Ewart, Doctoral Student, Faculty of Education, York University, Grade Two Teacher, Sunshine Public School
Teachers Implementing the Research Literacy Program:
Keri Ewart, Grade Two Teacher, Sunshine School,
J.S, Grade Two Teacher, Sunshine Public School,
A.R, Grade Two Teacher, Sunshine Public School

Purpose of the Research: In looking at research it looks like using the iPad in literacy classrooms helps students learn; but, nothing has be proven to say for sure. We still do not know if the iPad helps students in other classrooms around the world or if they can help students from one year to the next. The research we are going to do in class will tell us if using iPads in our literacy program will help you to become a better reader and develop better reading and thinking skills than if we did not use the iPads in our literacy program. Through a 24-week study we will be comparing two literacy programs: one which includes the use of the iPad as a teaching and learning tool and one which does not.

What You Will Be Asked to Do in the Research: As a participant in this study, you will be participating in two literacy programs with the rest your classmates as part of our regular in-class programming. One of the literacy programs is the *Critical Reading Literacy Program* (CRLP) and involves you building reading and comprehension skills through five important centers (Read to Self, Read to Someone, Work on Writing, Word Work and Listen to Reading). The other literacy program is the *Enhanced Integrated iPad Literacy Program* (IiLP) which uses the Critical Reading Literacy Program but goes past this by using the iPads and apps at all of the centers. We will be really interested in the difference between reading strategies and comprehension when in the CRLP as compared to when in the IiLP. When the study begins, you will be asked to fill in a short survey about your feelings towards reading and your use of technology. This is be anonymous, which means that nobody will know your name or who you are. You will then be asked to complete a PM Benchmark testing your reading and comprehension level. When the CRLP session is finished, you will do another PM Benchmark test to see how much your reading has improved, as a result of the CRLP. The second part of the study will be the IiLP. You will be trained using the iPads and at the end of the training, you will do a PM Benchmark test. Following the IiLP session, you will do a PM Benchmark test to decide if your reading has improved from using of the iPads in our literacy program. You may be audio-visually taped during the literacy sessions. Finally, at the end of the study you will be asked to answer questions about reading and technology, helping me to decide how to make our literacy program better.

Risks and Discomforts: We do not expect any risks or discomfort from your participation in the research.

Benefits of the Research and Benefits to You: You will be able to develop reading skills (decoding and comprehension) and reading strategies as well as critical thinking skills in a safe classroom. Also, you may develop better fluency and expression in your reading, express your ideas better orally and become a better reader.

Voluntary Participation & Withdrawal from the study: Your participation in the study is your choice and you may choose to stop participating at any time, for any reason. If you do not want to participate or choose to withdraw from this study, your decision will not change your relationship with the your researcher/teacher, the school, or any other group that is part of this project. If you decide to withdraw from the study, all information collected will be destroyed wherever possible.

Confidentiality: Images and information used in research/report writing will be private. Also, your name or any personal information will not appear in any report or publication of the research. Photos and videos will be used for data analysis purposes as needed and in conference presentations, workshops and seminars. Information about your reading development will be collected by your classroom teacher, and all research data will be safely kept on a hard-drive that will be protected by a password and will be stored in a locked cabinet in Keri Ewart's home. You will be

assigned a secret username and password to make sure your real name does not appear in the data. The research data will only be seen by the research team and by Mrs. Ewart's dissertation committee. After the end of the study in 2015, data will be stored for five years and then destroyed. Privacy will be given as much as possible by law. Any paper copies of records or information such as signed consents will be kept in a locked cabinet in the locked files of Mrs. Ewart.

Questions About the Research? If you have questions about the research or about your role in the study, please feel free to contact Mrs. Ewart in room XXX or on Edmodo (XXXX). This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and the Peel District School Board's Ethics Review Committee and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone XXX-XXX-XXXX or e-mail xxxxxx@xxx.com) and the York University graduate program in Education (XXX) XXX-XXXX or my dissertation advisor, A.J by e-mail xxxxxx@xxx.com or C.M (XXX) XXX-XXXX ext. XXXXX.

Legal Rights and Signatures:
I_____, consent to my child's participation in *Technological Literacies,* conducted by Mrs. Ewart. I have understood the nature of this project and wish for my child to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature_____ **Date**_____
Parental Consent

Signature_____ **Date**_____
Minor Consent

Signature_____ **Date**_____
Principal Investigator

For research-purposes only, I consent to

- ☐ Being video recorded
- ☐ Being interviewed
- ☐ Answering surveys
- ☐ Photographs taken

Appendix F

Adapted Motivations to Read Parent Questionnaire

As part of the study, we are also surveying students' parents on a number of similar topics including:

basic parent characteristics

child's past reading engagement

parents' own reading engagement

home reading resources and support

parents' background

parents' perception of and involvement in school

school choice.

The information you provide will be extremely valuable in building up a picture of how reading literacy develops in students and what influences its development.

When I am asked about <reading literacy>', what should I think about?

I mean by this term the skill to understand, use and think about written texts. This skill is needed to reach one's goals , to develop one's knowledge and potential, and to take part in society.

Who should complete this questionnaire?

This survey should be completed by a parent (or jointly by both parents) or other <primary caregiver> of the student. To make the wording of the questions simple _____ is often referred to as 'your child'.

I ask you to respond to all the questions you feel comfortable answering. There are no right or wrong answers and I assure you that your responses to this survey will be kept confidential.

Note: This questionnaire was adapted from the Parent Questionnaire for PISA 2009 International Version. The full version can be found at https://pisa2009.acer.edu.au/downloads/PISA09_Parent_questionnaire.pdf

Section 1: Basic parent characteristics

Q1. Who will complete this questionnaire?

(Please tick all that apply)

a) Mother or other female guardian ☐

b) Father or other male guardian ☐

c) Other *(If other, please specify)* _____

Section 2: Child's past reading engagement

Q2. When your child attended the first year of Kindergarten, how often did you or someone else in your home undertake the following activities with her or him?

(Please tick only one box in each row)

		Never or hardly ever	*Once or twice a month*	*Once or twice week*	*Everyday or almost everyday*
a)	Read books	☐	☐	☐	☐
b)	Tell stories and sing songs	☐	☐	☐	☐
c)	Play with alphabet toys (for example: blocks with letters of the alphabet)	☐	☐	☐	☐
d)	Talk about things you had done	☐	☐	☐	☐
e)	Talk about what you had read	☐	☐	☐	☐
f)	Play word games	☐	☐	☐	☐
g)	Write letters or words	☐	☐	☐	☐
h)	Read aloud signs and labels	☐	☐	☐	☐

Q3. In what language did most of the activities in Question 2 take place?
(Please tick only one box

a) English ☐

b) Punjabi ☐

c) Hindi ☐

d) Other (please specify) _____

Section 3: Parent's own reading engagement

Q4. When you are at home, how much time do you spend reading for your own enjoyment (e.g. magazines, comics, novels, fiction, non-fiction)?

(Please tick only one box)

a) More than 10 hours a week ☐

b) 6-10 hours a week ☐

c) 1-5 hours a week ☐

d) Less than one hour a week ☐

Q5. How much do you agree or disagree with these statements about reading?

(Please tick only one box in each row)

		Strongly Agree	*Agree*	*Disagree*	*Strongly Disagree*
a)	Reading is one of my favourite hobbies	☐	☐	☐	☐
b)	I feel happy if I receive a book as a present	☐	☐	☐	☐
c)	For me, reading is a waste of time	☐	☐	☐	☐
d)	I enjoy going to a bookstore or a library	☐	☐	☐	☐

Section 4: Home reading resources and support

Q6. Which of the following are available to your child in your home?
(Please tick one box in each row)

		Yes	*No*
a)	Email	☐	☐
b)	iPad or Tablet	☐	☐

c)	Internet connection	☐	☐
d)	Daily newspaper	☐	☐
e)	A subscription to a journal or magazine	☐	☐
f)	Books of his/her very own (do not count school books)	☐	☐

Q7. How often do you or someone else in your home do the following things with your child? *(Please tick only one box in each row)*

		Never or hardly ever	*Everyday*	*Once or twice a month*	*Once or twice a week*	*or almost everyday*
a)	Discuss political or social issues	☐		☐	☐	☐
b)	Discuss books, films or television programmes	☐		☐	☐	☐
c)	Discuss how well your child is doing at school	☐		☐	☐	☐
d)	Eat dinner with your child around a table	☐		☐	☐	☐
e)	Spend time just talking to your child	☐		☐	☐	☐
f)	Go to a bookstore or library with your child	☐		☐	☐	☐
g)	Talk with your child about what he/she is reading on his/her own	☐		☐	☐	☐
h)	Help your child with his/her homework	☐		☐	☐	☐
i)	Read to your child	☐		☐	☐	☐

j) Have your child read to you ☐ ☐ ☐ ☐

Section 5: Parent's background

Q8. Does the child's father have any of the following qualifications?
(Please tick one box in each row)

		Yes	*No*
a)	High school	☐	☐
b)	College/University	☐	☐
c)	Post-Graduate Studies	☐	☐

Q9. Does the child's mother have any of the following qualifications?
(Please tick one box in each row)

		Yes	*No*
a)	High school	☐	☐
b)	College/University	☐	☐
c)	Post-Graduate Studies	☐	☐

Section 6: Parent's perception of reading.

We are interested in what you think about reading.

Please tick only one box in each row

	Yes	*No*
Q11. Do you enjoy reading?	☐	☐

If you answered "Yes" to question 11, please answer question 12 and then skip to question 14. If you answered "No" to question 11, please skip to question 13 and proceed to question 14.

Q12. Please choose one of the following reasons for enjoying reading.

a) Educational ☐

b) Religious ☐

c) Pleasure/Entertainment ☐

d) Keep up to date with current affairs ☐

e) To fill Time ☐

f) Other (please specify) _____

Q13. Please choose one of the following reasons for not enjoying reading.

a) Lack of time ☐

b) Uninterested ☐

c) Tiresome ☐

d) Illiterate ☐

e) Other (please specify)

_____

Q14. How would you describe your child's perception of reading? *Please tick one box only.*

a) My child will read any chance he/she can get (highly enthusiastic) ☐

b) My child reads books without being asked (enthusiastic) ☐

c) My child reads when asked or reminded to read (somewhat enthusiastic) ☐

d) My child tries to avoid reading at all costs (not enthusiastic) ☐

Q15. How would describe your child's reading ability?

Please tick one box only.

a) My child is an exceptional reader and is much above grade level (reading chapter books) ☐

b) My child is a great reader and slightly above grade level (i.e., reading early chapter books) ☐

c) My child is a good reader and reading at grade level (i.e., reading early chapter books but mostly picture books) ☐

d) My child is an okay reader and slightly below grade level (i.e., reading picture books with more than ten words on a page) ☐

e) My child struggles with reading and is much below grade level (i.e., reading books with 1-9 words on a page) ☐

Q16. What does your child typically read?

Please tick boxes that apply.

a) Books from school ☐

b) Books from the library ☐

c) Books from home ☐

d) Magazines ☐

e) Newspapers ☐

f) e-books (on an iPad or tablet) ☐

Thank you very much for your co-operation in completing this questionnaire!

Student Attitude and Skill Questionnaire

MY Feelings About Reading

Name _____ Date _____


YES


SOMETIMES


NO

1. I like to read. _____ _____ _____

2. I read at home. _____ _____ _____

3. Reading is hard for me. _____ _____ _____

4. I like picture books. _____ _____ _____

5. Reading is fun. _____ _____ _____

6. I like to read long stories _____ _____ _____

7. I like someone to read to me. _____ _____ _____

8. Reading is boring. _____ _____ _____

9. I am a good reader. _____ _____ _____

10. I like the stories we read in school. _____ _____ _____

Appendix G

Technology Usage Inventory

Student Inventory

Primary Student Technology Survey (Grade 2)

Full Name: _____

1. What technology do you have at home? Check the all that apply.

_____ Desktop Computer

_____ Laptop Computer

_____ Internet

_____ iPad (mini or regular)

_____ Tablet

_____ Netbook

_____ Cell Phone

_____ None (I do not have any technology at home)

2. How often do you use technology?

_____ Everyday

_____ 4-5 days a week

_____ 2-3 days a week

_____ 1 day a week

_____ I never use technology

3. Did you use technology in the classroom last year?

_____ Yes

_____ No

4. If you answered yes to question 3, what type of technology did you use?

_____ Computer

_____ Internet

_____ iPad

_____ Netbook

_____ Other: (Name)

_____

5. On a scale from 1-10, how good are you at using technology (1 being I don't know how to use technology and 10 being I am the best in the class at using technology). Circle the number the best describes you.

1 2 3 4 5 6 7 8 9 10

6. Have you ever read a book using technology (i.e., on a computer or on an iPad)?

_____ Yes

_____ No

7. If you answered "Yes" to question #6, please answer question # 7 and #8. What sites/apps have you used to read?

Please List

_____

8. On a scale of 1-10 how comfortable do you feel about reading books on an iPad or computer? (1 being not comfortable at all to 10 being very comfortable).

1 2 3 4 5 6 7 8 9 10

9. On a scale of 1-10, how much fun is technology? (1 being, not fun at all to 10 being there is nothing I would rather do than use technology).

1 2 3 4 5 6 7 8 9 10

10. Would you like to use technology in the classroom this year? Explain.

_____ Yes I would like to use technology this year because

_____

_____

_____ No I would not like to use technology this year because

_____

_____

Parent Technology Survey

Parent's Name: _____

Child's Name: _____

1. What technology do you have at home? Check the all that apply.

_____ Desktop Computer

_____ Laptop Computer

_____ Internet

_____ iPad (mini or regular)

_____ Tablet

_____ Netbook

_____ Cell Phone

_____ Game Console (X-Box, Wii, Play Station)

_____ None (We do not have any technology at home)

2. How often do you use technology?

_____ Everyday

_____ 4-5 days a week

_____ 2-3 days a week

_____ 1 day a week

_____ I never use technology

3. How often does your grade two child use technology?

_____ Everyday

_____ 4-5 days a week

_____ 2-3 days a week

_____ 1 day a week

_____ I never use technology

4. Did your child use technology in the classroom last year?

_____ Yes

_____ No

5. If you answered yes to question 4, what type of technology did he/she use? If you answered no to question 4, please proceed to question 6.

_____ Computer

_____ Internet

_____ iPad

_____ Netbook

_____ Other: (Name)

_____

6. On a scale from 1-10, how good are you at using technology (1 being I don't know how to use technology and 10 being I am very confident at using technology). Circle the number the best describes you.

1 2 3 4 5 6 7 8 9 10

7. On a scale from 1-10, how good is your child at using technology (1 being my child does not know how to use technology and 10 being my child is excellent at using technology). Circle the number the best describes you.

1 2 3 4 5 6 7 8 9 10

8. Have you ever read a book using technology (i.e., on a computer or on an iPad/iPod/Tablet)?

_____ Yes

_____ No

9. If you answered "Yes" to question #8, please answer question #9. If you answered "No" to question # 8, please move to question # 10)

What sites/apps have you used to read?

Please List

_____

_____

10. Has your child ever read a book using technology (i.e., on a computer or on an iPad/iPod/Tablet)?

_____ Yes

_____ No

11. If you answered "Yes" to question #10, please answer question #11. If you answered "No" to question # 10, please move to question # 12)

What sites/apps has your child used to read?

Please List

_____

_____

12. On a scale of 1-10 how comfortable do you feel about reading books on an iPad or computer? (1 being not comfortable at all and 10 being very comfortable).

1 2 3 4 5 6 7 8 9 10

13. On a scale of 1-10 how comfortable is your child with reading books on an iPad or computer? (1 being not comfortable at all and 10 being very comfortable).

1 2 3 4 5 6 7 8 9 10

14. On a scale of 1-10, how much fun is technology? (1 being, not fun at all to 10 being there is nothing I would rather do than use technology).

1 2 3 4 5 6 7 8 9 10

15. Would you like to see technology used in the classroom this year? Explain.

_____ Yes I would like to see technology used this year because

_____

_____

_____

_____ No I would not like to see technology used this year because

_____

_____

_____

_____

Thank you for taking the time to do this survey.

Appendix H

Parent and Student Interview Questions and Comparison

Student Interview Questions

Note: The nature of these questions reflects the open structure and content used for the study.

1. What was your favourite part of literacy instruction?

2. What was your least favourite part of literacy instruction?

3. Tell me the best thing you learned about the iPad?

4. What program, the Standard Daily Five or the Enhanced Integrated iPad program did you like better? Why?

5. When you think about reading in Grade 2, what will you remember?

6. How can you use what you learned in literacy instruction to make you a better reader?

Parent Interview Questions

1. What can you tell me about the Daily Five literacy program?

2. What can you tell me about the Integrated iPad Literacy program?

3. How would you describe your son/daughter?
a) reading ability
b) reading engagement
c) reading comprehension
Note: if parents present the idea that their child's reading has improved, I will ask # 4, if nothing is said with regards to improvement, I will skip to #5.

4. What would you say could be attributed to your child's success?

5. What do you know about technology?

6. How will you continue to support your child in being a great reader?

Appendix I

Full Table of Results for AMRQ

Pre-Study Student/Parent Engagement and Ability Perceptions

Class	Student	Parent	Engagement Score Student	Engagement Score Parent	Engage-ment Label Student	Engage-ment Label Student	Ability Score Student	Ability Score Parent	Ability Label Student	Ability Label Parent
E1	001	001	1	1	Low	Low	1	1	Below	Below
E1	002	002	2	2	Med	Med	3	3	At Level	At Level
E1	003	003	1	1	Low	Low	1	1	Below	Below
E1	004	004	1	1	Low	Low	1	1	Below	Below
E1	005	005	1	1	Low	Low	1	1	Below	Below
E1	006	006	3	3	High	High	4	4	Above	Above
E1	007	007	2	1	Med	Low	2	1	Approaching	Below
E1	008	008	1	1	Low	Low	2	1	Below	Below
E1	009	009	3	3	High	High	3	3	At Level	At Level
E1	010	010	1	1	Low	Low	1	1	Below	Below
E1	011	011	2	2	Med	Med	3	3	At Level	At Level
E1	012	012	1	1	Low	Low	1	1	Below	Below
E1	013	013	1	1	Low	Low	1	1	Below	Below
E1	014	014	1	1	Low	Low	1	1	Below	Below
E1	015	015	3	3	High	High	4	4	Above	Above
E1	016	016	1	1	Low	Low	2	2	Approaching	Approaching
E1	017	017	1	1	Low	Low	1	1	Below	Below
E1	018	018	1	1	Low	Low	1	1	Below	Below
E1	019	019	2	2	Med	Med	2	2	Approaching	Approaching
E1	020	020	2	2	Med	Med	2	2	Approaching	Approaching
E2	021	021	1	1	Low	Low	2	2	Approaching	Approaching
E2	022	022	3	3	High	High	4	4	Above	Above
E2	023	023	1	1	Low	Low	1	1	Below	Below
E2	024	024	3	3	High	High	4	4	Above	Above
E2	025	025	3	3	High	High	4	4	Above	Above
E2	026	026	3	3	High	High	3	3	At Level	At Level
E2	027	027	1	1	Low	Low	1	1	Below	Below
E2	028	028	2	2	Med	Med	3	3	At Level	At Level
E2	029	029	2	2	Med	Med	3	3	At Level	At Level
E2	030	030	3	3	High	High	3	3	At Level	At Level
E2	031	031	3	3	High	High	3	3	At Level	At Level
E2	032	032	1	1	Low	Low	1	1	Below	Below
E2	033	033	3	3	High	High	4	4	Above	Above
E2	034	034	3	3	High	High	4	4	Above	Above
E2	035	035	3	3	High	High	3	4	At Level	Above
E2	036	036	1	1	Low	Low	1	1	Below	Below
E2	037	037	1	1	Low	Low	1	1	Below	Below
E2	038	038	1	1	Low	Low	1	1	Below	Below
C	039	039	1	1	Low	Low	1	1	Below	Below
C	040	040	2	2	Med	Med	3	3	At Level	At Level
C	041	041	3	3	High	High	3	3	At Level	At Level
C	042	042	2	1	Med	Low	2	1	Approaching	Below
C	043	043	1	1	Low	Low	1	1	Below	Below
C	044	044	3	3	High	High	4	4	Above	Above
C	045	045	2	2	Med	Med	3	3	At Level	At Level
C	046	046	3	3	High	High	3	3	At Level	At Level
C	047	047	2	3	High	High	4	4	Above	Above
C	048	048	3	3	High	High	3	3	At Level	At Level
C	049	049	1	1	Low	Low	2	2	Approaching	Approaching
C	050	050	1	1	Low	Low	1	1	Below	Below
C	051	051	3	3	High	High	4	4	Above	Above

C	052	052	2	2	Med	Med	3	3	At Level	At Level
C	053	053	1	1	Low	Low	2	2	Approaching	Approaching
C	054	054	1	1	Low	Low	1	1	Below	Below
C	055	055	1	1	Low	Low	1	1	Below	Below
C	056	056	1	1	Low	Low	1	1	Below	Below
C	057	057	1	1	Low	Low	1	1	Below	Below
C	058	058	1	1	Low	Low	1	1	Below	Below

Appendix J

Full Table of Results for TUI

Frequency of Usage and Comfort Level Based on the TUI

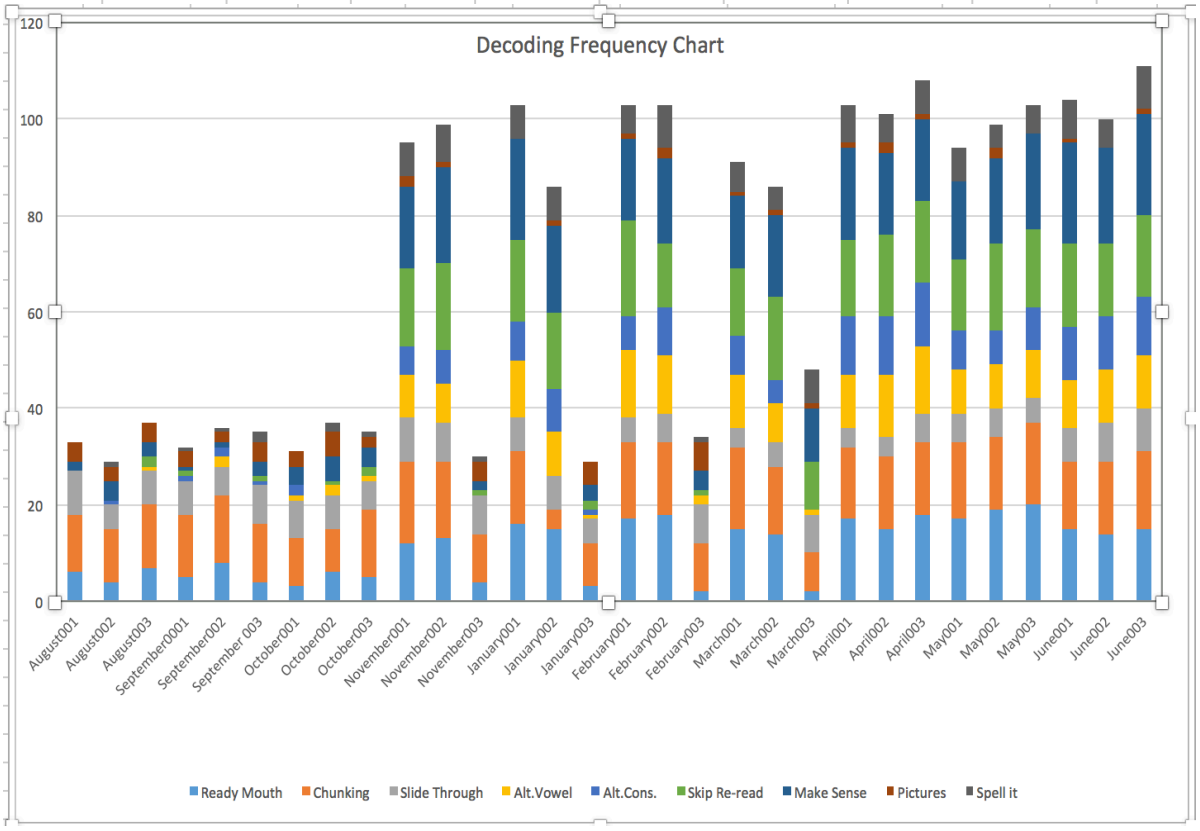
Class	Student	Parent	Perception of Technology Usage Student	Perception of Technology Usage Score Parent	Usage Label Student	Usage Label Parent	Percept-ion of Techno-logy Comfort Level Score Student	Percept-ion of Techno-logy Comfort Level Score Parent	Comfort Level Label Student	Comfort Level Label Parent
E1	001	001	1	1	Low	Low	1	1	Low	Low
E1	002	002	2	2	Med	Med	2	2	Med	Med
E1	003	003	1	1	Low	Low	1	1	Low	Low
E1	004	004	3	3	High	High	3	3	High	High
E1	005	005	3	3	High	High	3	3	High	High
E1	006	006	3	3	High	High	3	3	High	High
E1	007	007	3	3	High	High	3	2	High	Med
E1	008	008	3	3	High	High	3	3	High	High
E1	009	009	3	3	High	High	3	3	High	High
E1	010	010	1	1	Low	Low	1	1	Low	Low
E1	011	011	2	2	Med	Med	2	2	Med	Med
E1	012	012	3	3	High	High	3	3	High	High
E1	013	013	2	2	Med	Med	2	2	Med	Med
E1	014	014	1	1	Low	Low	1	1	Low	Low
E1	015	015	3	3	High	High	3	3	High	High
E1	016	016	3	3	High	High	3	3	High	High
E1	017	017	3	3	High	High	3	3	High	High
E1	018	018	3	3	High	High	3	3	High	High
E1	019	019	2	2	Med	Med	2	2	Med	Med
E1	020	020	3	3	High	High	3	3	High	High
E2	021	021	3	3	High	High	3	3	High	High
E2	022	022	1	1	Low	Low	1	1	Low	Low
E2	023	023	3	3	High	High	3	3	High	High
E2	024	024	1	1	Low	Low	1	1	Low	Low
E2	025	025	2	2	Med	Med	2	2	Med	Med
E2	026	026	3	3	High	High	3	3	High	High
E2	027	027	3	3	High	High	2	3	Med	High
E2	028	028	1	1	Low	Low	1	1	Low	Low
E2	029	029	1	1	Low	Low	1	1	Low	Low
E2	030	030	1	1	Low	Low	1	1	Low	Low
E2	031	031	3	3	High	High	3	3	High	High
E2	032	032	1	1	Low	Low	1	1	Low	Low
E2	033	033	1	1	Low	Low	1	1	Low	Low
E2	034	034	3	3	High	High	3	3	High	High
E2	035	035	3	3	High	High	3	3	High	High
E2	036	036	2	2	Med	Med	2	2	Med	Med
E2	037	037	3	3	High	High	3	2	High	Med
E2	038	038	1	1	Low	Low	1	1	Low	Low
C	039	039	1	1	Low	Low	1	1	Low	Low
C	040	040	3	3	High	High	3	3	High	High
C	041	041	2	2	Med	Med	2	2	Med	Med
C	042	042	1	1	Low	Low	1	1	Low	Low
C	043	043	1	1	Low	Low	1	1	Low	Low
C	044	044	1	1	Low	Low	1	1	Low	Low
C	045	045	1	1	Low	Low	1	1	Low	Low
C	046	046	1	1	Low	Low	1	1	Low	Low
C	047	047	3	3	High	High	3	3	High	High
C	048	048	3	3	High	High	3	3	High	High
C	049	049	3	3	High	High	3	3	High	High
C	050	050	3	3	High	High	3	3	High	High
C	051	051	1	1	Low	Low	1	1		

C	052	052	2	2	Med	Med	2	2	Med	Med
C	053	053	2	2	Med	Med	2	2	Med	Med
C	054	054	3	3	High	High	3	3	High	High
C	055	055	1	1	Low	Low	1	1	Low	Low
C	056	056	1	1	Low	Low	1	1	Low	Low
C	057	057	1	1	Low	Low	1	1	Low	Low
C	058	058	3	3	High	High	3	3	High	High

Appendix K

Progression of Decoding Strategies Within All Three Classes for the Year

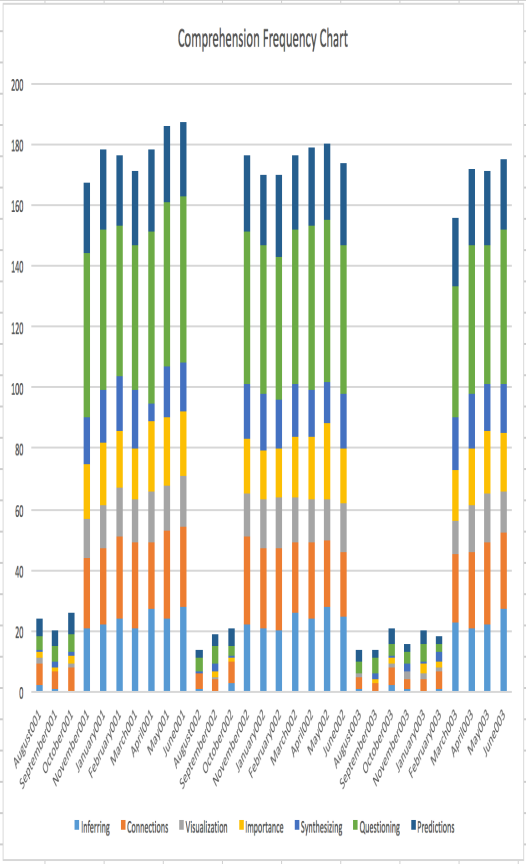
ClassesClasse	Ready Mouth	Chunking	Slide Throug	Alt.Vowel	Alt.Cons.	Skip Re-read	Make Sense	Pictures	Spell it
August001	6	12	9	0	0	0	2	4	0
August002	4	11	5	0	1	0	4	3	1
August003	7	13	7	1	0	2	3	4	0
September0(	5	13	7	0	1	1	1	3	1
September0(	8	14	6	2	2	0	1	2	1
September 0	4	12	8	0	1	1	3	4	2
October001	3	10	8	1	2	0	4	3	0
October002	6	9	7	2	0	1	5	5	2
October003	5	14	6	1	0	2	4	2	1
November0(	12	17	9	9	6	16	17	2	7
November0(	13	16	8	8	7	18	20	1	8
November0(	4	10	8	0	0	1	2	4	1
January001	16	15	7	12	8	17	21	0	7
January002	15	4	7	9	9	16	18	1	7
January003	3	9	5	1	1	2	3	5	0
February001	17	16	5	14	7	20	17	1	6
February002	18	15	6	12	10	13	18	2	9
February003	2	10	8	2	0	1	4	6	1
March001	15	17	4	11	8	14	15	1	6
March002	14	14	5	8	5	17	17	1	5
March003	2	8	8	1	0	10	11	1	7
April001	17	15	4	11	12	16	19	1	8
April002	15	15	4	13	12	17	17	2	6
April003	18	15	6	14	13	17	17	1	7
May001	17	16	6	9	8	15	16	0	7
May002	19	15	6	9	7	18	18	2	5
May003	20	17	5	10	9	16	20	0	6
June001	15	14	7	10	11	17	21	1	8
June002	14	15	8	11	11	15	20	0	6
June003	15	16	9	11	12	17	21	1	9



Appendix L

Progression of Comprehension Strategies Within All Three Classes for the Year

	Months	Inferring	Connections	Visualization	Importance	Synthesizing	Questioning	Predictions
2	August001	2	7	2	2	1	4	6
3	September0(	1	6	0	1	2	5	5
4	October001	0	8	1	3	1	6	7
5	November0(	21	23	13	18	15	54	23
6	January001	22	25	14	21	17	53	26
7	February001	24	27	16	19	18	49	23
8	March001	21	28	14	17	19	48	24
9	April001	27	22	17	23	6	56	27
10	May001	24	29	15	22	17	54	25
11	June001	28	26	17	21	16	55	24
12	August002	1	5	0	0	1	4	3
13	September0(	0	4	1	2	2	6	4
14	October002	3	7	0	1	1	3	6
15	November0(	22	29	14	18	18	50	25
16	January002	21	26	16	16	19	49	23
17	February002	20	27	17	16	16	47	27
18	March002	26	23	15	20	17	51	24
19	April002	24	25	14	21	15	54	26
20	May002	28	22	13	25	14	53	25
21	June002	25	21	16	18	18	49	27
22	August003	1	4	1	0	0	4	4
23	September0(	0	3	0	1	2	5	3
24	October003	2	6	1	2	1	4	5
25	November0(	1	3	3	0	2	4	3
26	January003	0	4	2	3	1	6	4
27	February003	1	6	1	2	3	3	2
28	March003	23	22	11	17	17	43	23
29	April003	21	25	15	19	18	49	25
30	May003	22	27	16	21	15	46	24
31	June003	27	25	14	19	16	51	23



Appendix M

Student Blogging Samples

Writing for the World

a. **The World is My Audience: Twima Twima2, Twima3**
b. **Re-write a Wikipedia Article**
c. **Blog/Vlog- Kid Blog, Word Press, Blogger, Weebly**
d. **Students of the World Students Write Students**
e. **YouTube and Kidzvuz**
f. **QuadBlogging, Article**
g. **Global Read Aloud**
h. **100 Word Challenge**

Sample Blogging Topics

Shannen dream	Apr. 10
Brampton vs Attawapiskat	Apr. 09
Attawapisskat And Canada Diffrences	Apr. 08
Atwapiskat	Apr. 07
Attwapaskat,Canada	Apr. 07
Attwacat and Canada different	Apr. 07
Attawapiskat	Apr. 02
Canada And Attawapiskat	Apr. 02
The differents of Canada and Attawapiskat	Apr. 02
(No Title)	Apr. 01
Attawapiskat	Apr. 01
men vs. women	Mar. 02
Can everyone afford the training to be in the Olympic	Feb. 28
What is my favourite tv show	Feb. 27
Can everyone afford the training Olympics	Feb. 27
Can everyone afford the training to be in the Olympics	Feb. 27
Men vs. women in the Olympics -is it fair?	Feb. 27

my biggest hero

Categories: Blog

October 30, 2013 @ 9:08 AM 2 Comments Edit this Post

My heroes are my Mom and Dad because they help me with my homework.

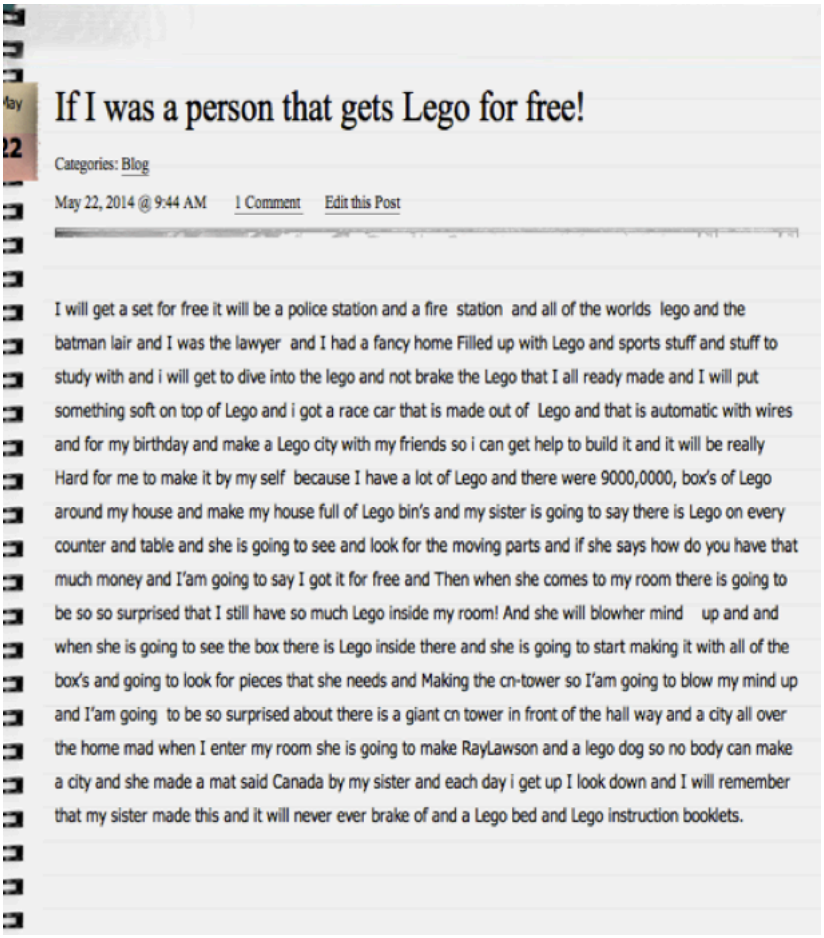
They also help me with the stuff that I need help with such as reading and art. I love my mom and dad and they are my heroes.

April 15, 2014 at 9:10 AM

Is anyone els your hero example brother and sister.

Edit | Unapprove | Delete

Reply



If I was a person that gets Lego for free!

Categories: Blog

May 22, 2014 @ 9:44 AM 1 Comment Edit this Post

I will get a set for free it will be a police station and a fire station and all of the worlds lego and the batman lair and I was the lawyer and I had a fancy home Filled up with Lego and sports stuff and stuff to study with and i will get to dive into the lego and not brake the Lego that I all ready made and I will put something soft on top of Lego and i got a race car that is made out of Lego and that is automatic with wires and for my birthday and make a Lego city with my friends so i can get help to build it and it will be really Hard for me to make it by my self because I have a lot of Lego and there were 9000,0000, box's of Lego around my house and make my house full of Lego bin's and my sister is going to say there is Lego on every counter and table and she is going to see and look for the moving parts and if she says how do you have that much money and I'am going to say I got it for free and Then when she comes to my room there is going to be so so surprised that I still have so much Lego inside my room! And she will blowher mind up and and when she is going to see the box there is Lego inside there and she is going to start making it with all of the box's and going to look for pieces that she needs and Making the cn-tower so I'am going to blow my mind up and I'am going to be so surprised about there is a giant cn tower in front of the hall way and a city all over the home mad when I enter my room she is going to make RayLawson and a lego dog so no body can make a city and she made a mat said Canada by my sister and each day i get up I look down and I will remember that my sister made this and it will never ever brake of and a Lego bed and Lego instruction booklets.