BRIDGING THE GAP BETWEEN TRADITIONAL AND NEW
LITERACIES FOR STUDENTS WITH LEARNING DISABILITIES

by

Kendra G. Arndt

B.A. The University of British Columbia, 1998
B.Ed. The University of British Columbia, 2002

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

(Language and Literacy Education)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

April 2013

© Kendra G. Arndt, 2013
Abstract

Using a qualitative case study design this thesis looks at literacy and the visual-verbal relationship. I describe the ways in which a child in grade three, formally diagnosed through standardized testing as having a writing learning disability, engages in new literacy practices in his home context. Data were collected via field notes, participant observation, semi-structured interviews, and digital photographs of artifacts. The theoretical frameworks that influenced this study were Vygotsky's social constructionist theory, the theory of new literacies, Gunther Kress’s theory of multimodality, and the New London Group's multiliteracies pedagogy. The artifacts I documented and collected were analyzed using multimodality analysis, as I adapted from Gillian Rose's visual methodology approach.

The focus is on the role of image and the ways the participant incorporated drawings and computer-generated visuals into his texts. The role of technology in his meaning-making and how it affects his identity construction and sense of agency is particularly noted and discussed. The overall aim is to inform current pedagogical practices and address a gap in the literature by focusing on a child who has a learning disability, yet who is superior in intelligence and gifted in other cognitive abilities, and to explore whether it is possible to bridge the gap between new literacy practices and traditional, school print-based ones. The findings reinforce current research on the importance of acknowledging and bringing into the classroom children's competencies with digital literacies from their out-of-school literacy practices. They also support the need to reassess current methods of teaching writing and to investigate the non-linear qualities in children's multimodal text-making. A final intent of this study is that it will raise awareness of addressing the needs of students who are marginalized...
in the classroom and how a multimodal and multiliteracies approach may support not only cultural diversity, but also learner diversity.
Preface

The UBC Behavioural Research Ethics Board provided approval for this study under the certificate number #H10-03034.
# Table of Contents

Abstract.............................................................................................................................................. ii  
Preface................................................................................................................................................ iv  
Table of Contents.............................................................................................................................. v  
List of Tables ....................................................................................................................................... x  
List of Figures ..................................................................................................................................... xi  
List of Abbreviations ..................................................................................................................... xii  
Acknowledgements .......................................................................................................................... xiii  
Dedication ............................................................................................................................................ xiv  

## Chapter 1: Today’s Classroom ........................................................................................................ 1  

1.1 Background of the Research Problem ....................................................................................... 1  
1.2 Research Questions ................................................................................................................... 5  
1.3 Researcher’s Background ........................................................................................................... 5  
1.4 Significance of the Study .......................................................................................................... 7  
1.5 Key Terms .................................................................................................................................. 8  
  1.5.1 New Literacies ...................................................................................................................... 8  
  1.5.2 Identity .................................................................................................................................. 8  
  1.5.3 Social Semiotics and Multimodality .................................................................................... 9  
  1.5.4 Text ...................................................................................................................................... 9  
1.6 Organization of the Thesis ........................................................................................................ 10  

## Chapter 2: Theoretical Frameworks and Related Literature ....................................................... 11  

2.1 Introduction .............................................................................................................................. 11  


3.8  Researcher Positioning ................................................................. 56
3.9  Research Methods ............................................................................. 57
    3.9.1  Procedure .................................................................................... 58
    3.9.2  Data Collection ........................................................................... 59
    3.9.3  Ethnographic Interviews ................................................................. 65
3.10 Data Analysis ..................................................................................... 66
    3.10.1  Context ....................................................................................... 67
    3.10.2  Rose’s Methodological Tools ......................................................... 68
3.11 Ethics ................................................................................................. 70

Chapter 4: Jacob’s Multimodal Texts ............................................................. 71
4.1  Text #1: Roman Children Slideshow .................................................... 71
    4.1.1  Context ....................................................................................... 71
    4.1.2  Site of Production ....................................................................... 72
    4.1.3  Site of Image ............................................................................... 74
    4.1.4  Site of Audience ......................................................................... 75
    4.1.5  Additional Points of Interest ......................................................... 76
4.2  Text #2: Roman Children Poster Board ................................................ 77
    4.2.1  Context ....................................................................................... 77
    4.2.2  Site of Production and Image ........................................................... 78
    4.2.3  Site of Audience ......................................................................... 80
    4.2.4  Additional Points of Interest ......................................................... 81
4.3  Text #3: Journal ................................................................................... 82
    4.3.1  Context ....................................................................................... 82
Chapter 5: Discussion of the Findings

5.1 Action and 3D

5.2 Technology, Identity, and Agency

5.3 Technology, Organization, and Output
List of Tables

Table 3.1: Jacob’s WISC-IV results..........................................................52
List of Figures

Figure 4.1: Jacob's Roman children slideshow ................................................................. 74
Figure 4.2: Front of Jacob's Roman children poster board ............................................... 80
Figure 4.3: Back of Jacob's Roman children poster board ............................................. 82
Figure 4.4: Battle scene from his narrative ..................................................................... 85
Figure 4.5: Another example of his drawings from his personal journal ......................... 85
Figure 4.6: Jacob's camera shot of his 3D gladiator scene ............................................ 86
Figure 4.7: Jacob's Londineum newspaper ..................................................................... 91
Figure 4.8: The hippo whisperer ..................................................................................... 95
Figure 4.9: The birthday card ......................................................................................... 96
Figure 4.10: Movie trailers, "Snowboard Kid" and "Snow" .............................................. 99
Figure 5.1: Awkward spring ......................................................................................... 111
Figure 5.2: Awkward spring revised ............................................................................. 111
### List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAI</td>
<td>general ability index</td>
</tr>
<tr>
<td>GD</td>
<td>gifted</td>
</tr>
<tr>
<td>ICT</td>
<td>information and communication technologies</td>
</tr>
<tr>
<td>IQ</td>
<td>intelligence quotient</td>
</tr>
<tr>
<td>LD</td>
<td>learning disability</td>
</tr>
<tr>
<td>L2</td>
<td>second language</td>
</tr>
<tr>
<td>NLG</td>
<td>New London Group</td>
</tr>
<tr>
<td>NLS</td>
<td>New Literacy Studies</td>
</tr>
<tr>
<td>WISC-IV</td>
<td>Weschler Intelligence Scale for Children-Fourth Edition</td>
</tr>
<tr>
<td>ZPD</td>
<td>zone of proximal development</td>
</tr>
<tr>
<td>3D</td>
<td>three dimensional</td>
</tr>
<tr>
<td>2D</td>
<td>two dimensional</td>
</tr>
</tbody>
</table>
Acknowledgements

I would like to acknowledge a number of important people who helped me on this journey. First and foremost, I extend my sincere gratitude to my supervisor, Dr. Maureen Kendrick, for her never-ending patience, expertise, and encouragement. Her guidance kept me focused and allowed me to persevere. I would also like to give thanks to the other members of my committee, Dr. Jim Anderson and Dr. Marion Porath. Dr. Anderson’s constructive quibbling helped me strengthen my work and, as always, his insightful comments provided me with good food for thought. I am also grateful to have met Dr. Porath, whose extensive background and understanding of the gifted learning profile is admirable. I am also appreciative of her attention to detail.

I am especially grateful for “Jacob” and his family, for allowing me, originally a stranger, to enter their home and integrate myself into their family on those early weekend mornings. Jacob, I thoroughly enjoyed getting to know you and you helped me to become a better teacher. You are so bright and have a great sense of humour and amazing talents. I am excited to see where life takes you.

I also give my love and gratitude to my parents for their support and encouragement. My mother never wavered when I presented her with yet another chapter to review and edit for me, and I cannot thank her enough for the hours of babysitting she provided so I could have a quiet space to work. My father’s clear sense of logic and reassurance also helped keep me grounded.

Finally, I thank my husband not only for his patience with my impatience, but also for his positive attitude and for believing in me. To Aurora and Kira, my two beautiful young daughters, who always gave me hugs and kisses as I sat and typed away, I love you.
Dedication

To my family
Chapter 1: Today’s Classroom

1.1 Background of the Research Problem

Current Western societies’ education systems need to better reflect the increasing changes in their classrooms including cultural diversity, the rapid advances that continue to occur in technology, and globalization, all of which are ultimately shifting how children communicate, think, and learn (Cope & Kalantzis, 2000; Jewitt, 2005, 2008; Kalantzis, Cope, & Harvey, 2003; Kress, 2000a; New London Group, 1996). This includes the way they read, their reading comprehension (Coiro, 2003; Leu, 2002), and writing habits (Bezem & Kress, 2008). It would appear many educators and policy makers are uncomfortable with knowing how to support such rapid changes in communication and in turn, creating new educational tools and adjusting their curriculum and philosophies. As a result, many classrooms still rely on a largely monomodal based teaching method remaining logocentric, page and print-bound, and assessment driven (Hull & Nelson, 2005; Millard, 2003; Vincent, 2006). Yet, as emphasized by research in multimodality (Jewitt, 2005, 2008; Kress, 2000a; Kress & van Leeuwen, 1996), as it relates to the New Literacy Studies (NLS) (Lankshear & Knobel, 2006, 2007; New London Group, 1996; Street, 1984, 2003), we naturally transform and express meaning in multifaceted ways through a complex intertwining of modes, be it gestural, visual, oral, or musical (Kress, 2000a; Kress & van Leeuwen, 1996). How the meaning-maker and reader interpret and interact with these modes is influenced by his or her sociocultural background, and so literacy is no longer about acquiring culturally insensitive, decontextualized, and isolated skills (New London Group, 1996; Street, 1984). Rather, a person becomes literate as he or she interacts with others and participates in social events.
In this day and age, children integrate their experiences and competencies with digital literacies and multimedia with their learning, and children are interested in being more creative with their school texts as opposed to resorting to the typical expository essay. Instead, children are creating multidimensional texts (Dyson, 1993; Rowsell & Pahl, 2005). The affordances of digital technology which includes hypertext, hyperlinks, and multiple screens to display information means that a reader is “able to choose among various permutations and combinations of ‘non-linear’ pathways through one or more texts” (Unsworth, 2001, p. 12). The result is different types of information come to light for each reader, affecting their overall interpretation.

Adding to the multidimensional realm of literacy learning is the fact the classroom is a complex environment where a number of social worlds, each with its own values and discourse, coexist. Understanding the ways in which children negotiate and navigate these many worlds through their symbolic systems, as they establish their multiple and interrelated social identities, is a key part in knowing how to support them (Dyson, 1993; New London Group, 1996). In turn, discovering effective ways to shift current pedagogical practices in classrooms that follow a more traditional approach could prove to significantly alter a child's literacy journey through school.

The British Columbia Ministry of Education (2013) also realizes the need for a more flexible curriculum which recognizes 21st century skills. Although there still seems to be an emphasis on writing in the English Language Arts curriculum (Kendrick & Rowsell, in press), evidence of the Ministry becoming more cognizant of how individuals prefer to communicate nowadays is indicated in some of the phrasing in its documents. For example, in the Curriculum Package for grade 3, for English Language Arts, it mentions that students
should be able to “use a variety of strategies before writing and representing” (BC Ministry of Education, 2010, p. 22). I contend that by further integrating other modes of communication into the curriculum and allowing children to express themselves in non-linear and alternative ways (such as: visual, spatial, oral, etc.), this will help educators support children who are often marginalized in school settings. These can be the children officially labeled as having a learning disability and who struggle with traditional literacy practices as typically experienced in the classroom, and yet who have average to above average intelligence and overall cognitive abilities.

In this study I look at writing, which for many children who are designated as having a reading, spelling, or writing disorder, can create a barrier to their learning because they have difficulty acquiring the technical skills to become strong writers and they do not effectively use writing to extend their learning (Englert, Okolo, & Mariage, 2009; Kress, 1994). In the 1980s, writing was at the top of the “literacy hierarchy” list (Kress, 1994) and played a major part in determining a child’s academic success. For some educators, the innovative writing workshop approach proposed by Donald Graves (1981) evolved into a pedagogy that strictly viewed the workshop as a linear progression through a series of steps (e.g., brainstorm, pre-write, peer conference, edit and review, good copy). Nowadays, even though there is a better understanding that writing is recursive in nature and children are being encouraged to express themselves in a variety of ways, beyond print, it still appears writing is a large focus in many classrooms and a primary method for assessment.

There is plenty of research in the literacy field that discusses supporting diversity; however, little of this research literature explores genuine academic ability diversity. That is, in addition to cultural diversity teachers need to be more aware of neurodiversity, a term
which Thomas Armstrong (2012) believes is important to include in educational discourse to acknowledge the complex neurological differences among individuals and which allows teachers to see the abilities as opposed to the disabilities of their students.

Children who have learning disabilities who may not respond as immediately or as effectively as their peers to a teacher’s instructional cues have what some describe as an “invisible handicap,” which hides the ways in which they think and learn best (Berninger & Richards, 2002). If there is an expectation to “ensure that differences of culture, language, and gender are not barriers to educational success” (Cope & Kalantzis, 2000, p. 10), then learning abilities should be an additional difference to which attention is paid to.

Taking a sociocultural perspective supports diversity and acknowledges that inevitably children's interests, skills, life experiences, and identities are brought into the classroom and embedded into their texts (Genishi & Dyson, 2009; Rowsell & Pahl, 2007). Teachers need to realize the potential of this capital, which could help extend and push a child's boundaries of learning (Albers & Harste, 2007; Bearne, 2003), bringing about genuine, effective, and meaningful learning for all types of learners, including those at-risk.

Researchers are frequently discussing what it means to be a learner in the 21st century in our ever increasing visual society (Jewitt, 2002, 2005, 2008; Kress & van Leeuwen, 1996), yet there is little evidence demonstrating how these changes are being acknowledged in the classroom environment. It is imperative to further investigate the ways students who take alternative paths to traditional literacy, including students with learning disabilities, make meaning beyond language (Vincent, 2006).
1.2 Research Questions

The purpose of this single case study was to describe one child's challenges with written output from a traditional literacy perspective and, in comparison, depict his progress while engaged in new literacy practices. I focused on the mode of image because of the observations I have made over the years as a teacher, of my students preferring to revert to visuals in their learning. I documented the ways this child interpreted and incorporated drawings, pictures, and visual technology into his texts. The research questions guiding this study were:

1. In what ways do visual modes of communication (e.g., drawing, photography, computer-generated visuals) help motivate and support a child who has a writing learning disability engage with traditional, print-based texts?

2. How does a child with a writing learning disability use the interplay of word and image in text construction?

3. What is the role of the visual mode in the participant’s construction of his identity as a learner?

1.3 Researcher’s Background

My interest in this research topic stems from eighteen years of working with students from varied backgrounds and of varying ages who have learning disabilities. I have worked with students both in a private reading remedial clinic as well as in a school setting and in both contexts I helped students strengthen their reading, spelling, writing, comprehension, and mathematical abilities so that they could succeed in school. At the time of this research, I was working as a special educational needs teacher in an independent school on the West side of Vancouver, British Columbia. Here, I continue to witness how for most of my students,
reading, spelling, and writing are arduous tasks, which usually have little meaning to them and demand a significant amount of mental energy. They have a tendency to react negatively to seeing print in any form. It is difficult for some of them to grasp that their level of intelligence is not related to their ability to encode or decode print, and it can affect their level of confidence and sense of agency. Their inabilities are usually the source of conflict between parents and teachers, and even within themselves, because generally a child is required to conform as much as possible to the education system rather than the other way around.

From my experience, the strengths of students considered gifted tend to be their non-verbal abilities and superior visual-spatial and perceptual reasoning skills, yet these skills are not typically utilized or developed in the classroom. The fact that many of my students naturally resort to drawings and visuals to express themselves or to understand what they are learning is the reason for my interest in the significance of the role of image in children’s literacy practices. I also witness, regularly, their competencies with digital tools and technology and how it motivates them to learn and, at times, helps bridge them to print-based tasks.

I feel my background and extensive experience working one-on-one with children with learning disabilities, from a wide range of cultural backgrounds, and helping them gain the skills and strategies necessary to succeed in school provided me with a good springboard for undertaking this research. I have witnessed their frustration with trying to conform to school expectations, and I have been pleasantly surprised by their strengths and talents that have sometimes gone unnoticed by their teachers. For example, many of my students have been highly artistic and musical. I have also struggled as a teacher to find a balance between
my personal beliefs with how best to support children while trying to stay abreast of current theories and ideas. Incorporating current theories on literacy into my teaching, has proven challenging as I have to abide by school philosophies and standards of practice. For these reasons, I was both personally and professionally invested in this research study.

1.4 Significance of the Study

Research on the mode of image and visual literacy in the “communication landscape” (Jewitt, 2005, 2008; Jewitt & Oyama, 2001; Kress, 2000b, 2005; Kress & van Leeuwen, 1996) has taken prominence in recent years, and the debate continues over the significance of image versus word in today's society. The value of looking at image as a dominant mode of expression is beneficial for at-risk learners; however, references to at-risk learners in the literature are generally made in reference to those from low socioeconomic status backgrounds, those from minority groups, or second language (L2) learners. Little can be found in the research literature that is dedicated to those students who are diagnostically assessed as having a learning disability or those diagnosed as being gifted in addition to having a learning disability. These students can also struggle to succeed in school and reach their potential. There appears a need to go beyond the typical language learner and look at those who may struggle with processing language, including print, and how research in new literacies applies to them.

In this case study, I will explore the meaning-making practices of one child who is drawn to images and visual digital technology, as observed in the home setting. Although the results of this study which are based on the profile of a single child cannot represent the general population of children with learning disabilities, it will still be integral in helping formulate further research questions and will contribute to the theory of NLS, as it may
support the argument for a multimodal and multiliteracies pedagogy. It will help educators understand how the visual mode could possibly bridge the gap for some individuals between traditional and new literacies practices.

The implications of this study should be beneficial to school educators and policy makers. It will also be insightful for families who struggle with knowing how to advocate for and support their children who struggle with academic print-based tasks, yet are able to express their understanding in other ways.

1.5 Key Terms

The terms: new literacies, identity, social semiotics, multimodality, and text are key concepts that are used in several fields of studies with sometimes different connotations and so it is beneficial to provide specific definitions, as they pertain to this research study.

1.5.1 New Literacies

For the purpose of this study, new literacies is adopted from the perspective of Lankshear and Knobel (2006) who focus on the new ways individuals make meaning (beyond reading and writing) that have come about from the Internet and other information and communication technologies (ICTs), and the way they have resulted in new social practices and (new) Discourses. Discourses are conceptualized as related social practices within specific contexts that involve the interplay of particular ways of interacting and of using, among others, language and gestures (Gee, 1996; Lankshear & Knobel, 2006).

1.5.2 Identity

Identity encompasses the specific ways that people act and interact, which are context dependent (Gee, 2000). This means individuals can have multiple identities; for example, an individual may identify with being a teacher, parent, artist, and athlete, but will shift among
these identities accordingly. Additionally, identity can also be conceptualized in terms of the individual and how they “understand their relationship to the world, how that relationship is constructed across time and space, and how people understand their possibilities for the future” (Norton, 1997, p. 410). Thus, an individual’s identity is not fixed.

### 1.5.3 Social Semiotics and Multimodality

Semiotics is the study of signs and sign systems (Halliday, 1993; Halliday & Hasan, 1985). It is the study of meaning and each sign is embedded within a meaning-making system, which is the social system or culture to which an individual belongs. Kress extended social semiotics to explain there are multiple ways to make meaning besides language (Kress, 2000a; Kress & van Leeuwen, 1996).

Multimodality encompasses all modes of communication that an individual uses to make or express meaning. These include: visual, spatial, gestural, linguistical, and musical modes. Each mode has its own semiotic characteristics and its own unique potential and constraints for expression, referred to as affor- dances (Kress & van Leeuwen, 1996). When these modes intersect they create a “multidimensional semiotic space” (Halliday, 1993, p.107).

### 1.5.4 Text

The term (multimodal) text in this paper is defined as a product where the meaning is realized and drawn upon from a synchronisation of modes of communication. The co-presentation of these modes is also represented through more than one semiotic code (Kress, 2000a). A text is also considered an “artifact,” whereupon there is a build-up of history and a child's multiple identities, which may be traced as social practices in the text, making it multidimensional and allowing for more than one interpretation (Rowsell & Pahl, 2007).
Therefore the relationship between reader or writer and the text itself is a dynamic and social one.

1.6 Organization of the Thesis

This thesis consists of six chapters. Chapter One introduces the reader to the background of the research problem, outlines the research questions, provides the background of the researcher, explains the significance of the study, and defines key terms. Chapter Two summarizes the four theoretical frameworks that influenced this study which were: Vygotskian social constructionist theory, Kress’ theory on multimodality, multiliteracies pedagogy as founded by the New London Group (NLG), and the theory of new literacies. The second chapter also provides a review of the literature that is pertinent to the research questions and addresses any gaps. Articles reviewed were categorized under the themes of: affordances of drawing, the visual-verbal connection, new literacies and learning disabilities, writing, and multimodal pedagogy and assessment. Chapter Three presents the participant and his family, discusses the method of recruitment and the researcher’s positionality, and also reviews the research methods used including the procedure, the data collection, and analysis. Chapter Four presents the analysis of six of Jacob’s multimodal texts and Chapter Five is a discussion of the findings in relation to the research questions. Finally, Chapter Six begins with a summary of the research followed by implications for current pedagogy, limitations of the study, questions to consider for future research, and the conclusion.
Chapter 2: Theoretical Frameworks and Related Literature

2.1 Introduction

Vygotsky’s theory of social constructivism was the overarching theoretical framework in this study. I also drew on the New Literacy Studies, multiliteracies, multimodality, and various perspectives surrounding the concept of new literacies (e.g., Coiro, Knobel, Lankshear, & Leu, 2008). All of these frameworks will be summarized below. Additionally, a review of the current literature in the field of literacy and education, as it relates to the research questions will be presented. Several research articles were reviewed and categorized under the following headings: affordances of drawing, the visual-verbal connection, new literacies and learning disabilities, writing, and multimodal pedagogy and assessment.

2.1.1 Social Constructivism

This study was influenced by Vygotsky and his social constructionist framework (John-Steiner & Mahn, 1996; Vygotsky, 1978), which views meaning-making and the acquisition of knowledge as social processes that happen when an individual collaborates with others, as he or she questions and reflects upon his or her own explorations and discoveries. Vygotsky determined there was an interfunctional relationship between thought and language and that cognitive development is a dynamic process (Brooks, 2005, 2009; Vygotsky, 1986). This process involves the internalization of psychological tools that helps a person’s lower mental functional skills evolve to higher mental functioning skills (Bodrova & Leong, 2007). This occurs through mediated activity, which involves signs such as language, numbers, drawings, or writing. It is this mediation (system) that allows collaborations to take place in order to construct meaning and aid in an individual’s development (Brooks, 2009; Vygotsky, 1986).
Through these interactions a child engages in what Vygotsky referred to as the zone of proximal development (ZPD), which is the distance between the actual developmental level of a child, where he or she can independently problem solve, and the level of his or her potential development, which is what can be accomplished when aided by a knowledgeable other (Rogoff, 2003; Vygotsky, 1978).

Vygotsky's theory on creativity is also integral to understanding children's text-making. The notion of images always brings to light the idea of creativity or imagination and these two terms are frequently used by educators when describing a child's text. Some researchers have looked at ways to measure creativity in multimodal texts (Pahl, 2007), but creativity is an abstract term and not easily defined or assessed. In a traditional sense, being creative means being innovative and having the ability to come up with original ideas and connections. It is an unconscious and intuitive concept and it has only been in the past few decades that it has been considered in relation to social contexts as opposed to from a purely cognitive perspective (Loveless, 2003). Vygotsky provides a more scientific understanding of the notion of creativity, yet it is easy to see how his definition is also built upon the idea of social processes playing a key role in its development and realization.

Vygotsky's theory (2004) underlies the NLG’s (1996) concept of people being “designers of our social futures” (p. 36). The notion of design is possible because of people’s ability to be creative with their imagination and envision a new idea of the future; even children engaging in the activities of drawing and writing reflect the brain's capability to rework their experiences into new and creative actions to construct a new reality (Vygotsky, 2004). If people were only able to design their social futures by reproducing the past, they would find themselves limited in their development. Essentially, imagination is the basis of
all creative activity and is embedded within all parts of one's cultural life (Vygotsky, 2004).

2.1.2 New Literacy Studies and New Literacies

The initial theories behind the NLS began in the 1980s (Gee, 1996; Street, 1984) and took an alternative approach to literacy that went against the western, traditional, and autonomous model. The NLS still focused on reading and writing as the nucleus of literacy, but instead of taking a psychological perspective and viewing literacy as a structured set of technical and cognitive skills to acquire and master, the NLS took a sociocultural perspective. Literacy was seen to be socially constructed as a result of participating in various social and cultural communities and contexts (Knobel & Lankshear, 2006). There was also the understanding that how an individual read or wrote a text was influenced by his or her own value and belief systems (Street, 1997).

Following the NLS, came a branch of research that focused on new literacies, which are a relatively new and complex field of study taken up by a wide variety of disciplines leading to multiperspectives and multitheoretical approaches. The perspective of Lankshear and Knobel (2006) has been assumed in this paper and they define new literacies as: “socially recognized ways of generating, communicating and negotiating meaningful content through the medium of encoded texts within contexts of participation of Discourses” (p. 64). Lankshear and Knobel (2006) began observing in the 1990s how the Internet was playing a large role in the changes happening with technology, resulting in new social and cultural practices. One of their most prominent research interests has been with new technologies in relation to children's literacy practices, critical literacy, and pedagogy. With the understanding that the rapid advances that continue to occur in technology mean that what is new can be considered old very quickly, Lankshear and Knobel (2007) look at new literacies
from a historical standpoint and not a time-based one. Also, these new (literacy) social practices reflect socially developed and accepted ways of using technology to communicate and so those participating in these social practices share a new Discourse.

To better understand new literacies, Lankshear and Knobel (2006, 2007) describe two aspects referred to as: technical stuff and ethos stuff. The former pertains to the use of digital devices and the manual operations needed to engage in digital literacy practices, whereas the latter defines the mindset framing a literacy practice and there are two mindsets. The first mindset is referred to as the physical-industrial mindset and views the contemporary world as not being different than in the past except with some advances in technology. In contrast, the other mindset views a changed world from the past and is referred to as a post-industrial mindset which takes into account that there is a cyberspace with unique rules of operation and assumptions. It is this mindset which supports authentic new literacies and innovative ways of thinking about literacy; it is creating new contexts and possibilities for learning (Black, 2008). The physical-industrial mindset merely supports digitized ways to engage in traditional methods of reading and writing. Unfortunately, in some classroom environments there can be a conflict between the teacher(s) and traditional school system of the old mindset and students of the new one (Black, 2008), which can result in a disconnection between how technology is being utilized inside versus outside the classroom.

2.1.3 Multiliteracies

In the mid-1990s in New London, New Hampshire, a group of ten scholars came together to discuss aspects of literacy teaching that were shifting due to changes in the communication landscape. This formed what is now referred to as the New London Group (Cope & Kalantzis, 2000; New London Group, 1996). They devised the term multiliteracies
to describe the complexity of modern texts and the changes in the ways language was being used. For example, they observed that with advances in new technologies and with today’s societies becoming more culturally and linguistically diverse, meaning-making was becoming much more multimodal.

Their conceptual framework of “design” and their pedagogical framework, which looks at the interrelationships and various components of multiliteracies are what seemed relevant to me and was what I kept returning to during the course of my research and data analysis. Their concept of “design” acknowledges the ways in which people communicate in this day and age in Western societies (in English), which is continually being impacted by the rapid changes witnessed in our global economy and which heightens social, cultural, and linguistic diversity (Cope & Kalantzis, 2000; Kalantzis et al., 2003; McLean, Bling, & Rowsell, 2009; New London Group, 1996). Their work is imperative for better understanding today's young learners and the various texts they create with multimedia and technology. They accept and recognize that ICTs are an everyday part of their lives (Cope & Kalantzis, 2009b; Iyer, 2007; Kalantzis et al., 2003; McLean et al., 2009) and play a pivotal role in the formation of their identities.

Some researchers and theorists propose that teachers need to recognize the technological revolution transpiring in society and adjust their teaching practices accordingly (Kalantzis & Cope, 2005; Kalantzis et al., 2003). Children’s text-making involves a multitude of representational forms, including hybrid texts composed of both traditional and new forms of literacies (Cope & Kalantzis, 2009a; Iyer, 2007). With a change in pedagogy and with teachers and students being active players in designing their social futures, differences can be appreciated and accounted for, allowing more equitable access and participation for all in
education and society. This would also lead to a better understanding of the diversity of the present student population; educators should learn about the numerous social communities students may identify with outside of school which give these students confidence and a sense of belonging. Doing so would help educators acknowledge students have multiple identities and if they capitalize on what their students’ strengths are, and through these strengths help the students take ownership of their learning, this can reduce the likelihood of children becoming marginalized.

As the “designer,” the teacher lays the organizational structure and foundation for the process of creation which results in a final product. Teachers design both the ways in which children learn and the environment within which they learn; they can motivate and customize learning according to the desired outcome (Cope & Kalantzis, 2009b). They view all forms and representation as part of a dynamic process which involve “complex systems of people, environments, technology, beliefs and texts” (New London Group, 1996, p. 73). The actual process of creation is equally as important as the end result. Observing the process allows a teacher to be able to discover the complexity of the development of the final product which would have been lost otherwise. There are three major components to the Design framework which apply to all semiotic activity used in multimodal text-making: Available Designs (the resources of meaning that a sign-maker pulls from when designing his or her text, such as previous experiences), Designing (the relationship between a sign-maker’s Available Designs, his or her design choices, and the final product), and the Redesigned (the final product which becomes a new Available Design for future meaning-making).

The NLG’s beliefs are that the mind is “embodied, situated, and social” (New London Group, 1996, p. 82) and that knowledge, and cognitive development in general, is initially
nurtured and developed as a result of social interactions and collaborations with others. These interactions must include an expert within a community, around a specific domain of inquiry. Only after this foundation of knowledge is built can abstractions and generalizations be made. This theory forms the basis of what the NLG believes to be the nature of learning and teaching.

The NLG’s pedagogy, which is influenced by Vygotsky, seems to echo his postulations about the ways in which novice learners learn only from others of greater expertise while engaged in legitimate peripheral activities that are skill specific (John-Steiner & Mahn, 1996). Even though the NLG does not necessarily refer to Rogoff, a Vygotskian scholar, she expanded his notion of ZPD, which she felt was too restrictive to academic type learning and discourse, and coined the term *guided participation* (Rogoff, 2003). This broadens the social context beyond school where learning from an expert takes place and where the learner internalizes both strategies and his or her new-found knowledge. Experts could be an adult, parent, or peer, and over time children require less and less guidance as they recognize and establish patterns or habits of learning (Rogoff, 2003; Vygotsky, 2004). Both Vygotsky’s and Rogoff’s ideas are at the core of the multiliteracies pedagogy.

2.1.4 Multimodality

Like multiliteracies, multimodality is a response to social, political, cultural, and communication changes (Jewitt, 2005, 2008; Kress & van Leeuwen, 1996). To better understand how children use image and print, multimodality from the perspective of Gunther Kress (1997, 2000a) was referred to. Kress (1997) explains that children are naturally multimodal as they try to make sense of the language(s), images, space, and gestures around them (Anning, 1999, 2004; Kress & van Leeuwen, 1996). As children mature, they
continually experiment with and explore literacy possibilities (Anning, 1999; Wohlwend, 2009) as they engage in social practices with other members both within and across their numerous communities, through various symbolic practices (Cazden et al., 1996; Dyson, 1992; Vygotsky, 1978).

Based on social semiotic theory, a mode “is a socially shaped and culturally given resource for making meaning” (Bezemer & Kress, 2008, p.171), and different modes have different affordances. For instance, what can be expressed effectively through pictures may not be as easily expressed through words. This supports the argument that teachers should not focus on a single and exclusive mode, such as print because this does not reflect the complexities of how people naturally learn (Kress, 2000a), nor does it reflect the realities of our modern multi-media world and the avenues they have opened up for multimodal expression and meaning-making (Cope & Kalantzis, 2009b).

In the research study described in this thesis, the focus was on looking at the interplay between the modes of image and print. Image deals with space and how elements are arranged and displayed within that space to represent and reflect a certain reality. It is up to the reader to discover and create order of the elements displayed (Cope & Kalantzis, 2009a; Kress, 2003). Although the reader’s sociocultural background and experiences will also affect his or her interpretation of a piece of writing, writing is nonetheless more structured and linear. There is a pre-determined order to reading print. Reading the written word versus looking at images requires different kinds of imagination and processing styles, and different ways of learning about the world (Cope & Kalantzis, 2009a; Hull & Nelson, 2005).

As children begin to navigate through the world of print, they quickly discover that it goes against their logic. They are used to an obvious relationship between meaning and form;
for example, if they wish to represent a cat on paper they will draw what is meant to resemble a cat. On the other hand, with print there is ambiguity between sound and “picture.” For instance, a child needs to learn that the sound /s/ is represented by the arbitrary letter form ‘s.’ Despite its more structured and rigid description, writing is also multimodal. Just like for drawing a picture or setting up a physical space to play “house,” a blank piece of paper for the purpose of writing is still a “space” to be designed, organized, and planned out, requiring other modes in the process (Kress, 1997).

Regardless of how commonsensical all of this sounds, the question of what exactly multimodal data are and how to analyze them is constantly debated (Bearne 2009; Flewitt, Nind, & Payler, 2009) because of how diverse they are. To date, it has proven difficult to conceptualize and come up with common terms to describe data both inter and intra-modally (Flewitt et al., 2009; Hull & Nelson, 2005); or as Kress describes, the processes of transformation, when changes happen within a mode, and transduction, when there are changes across modes (Bezemer & Kress, 2008). For instance, if a pair of students design and carry out a scientific experiment for their school’s Science Fair project, this will typically involve material resources, oral discussion, and gestures as they go through the experimentation stage. When it is time to present their results on a poster board, they now have to transfer and demonstrate their knowledge, through transduction, into different modes, which is usually only that of print and image. How do educators describe and account for the meaning-making that occurred through the modes of oral discussion and gesture? How do they account for what meaning may have been lost (or perhaps gained) as they moved across modes (Bezemer & Kress, 2008) to present their work in only writing and images?
2.2 Related Literature

Initially, the purpose of this literature review was to critically analyze articles that looked at the ways in which children that struggle with their written output and have been officially identified as having a learning disability engage in new literacy practices. My main focus was to look at the role of image in their text-making and how their engagement with multimodal text practices differs from their engagement with more traditional print-based literacy practices. However, I found that while there is a significant amount of research that looks at the interplay between image and word, there is a gap in the research that specifically looks at this interplay in relation to children with learning disabilities when looking through the lenses of multiliteracies, multimodality, and new literacies. Most articles that discuss learning disabilities and multimodality look at it from a behavioral modification, or therapeutic perspective, as opposed to from an educational one. This literature review takes a broader approach to help identify and address gaps in the literature.

As a result, several studies were examined that looked at the general role of visuals in children's multimodal text-making, in order to better understand current theories on the word-image relationship. To better understand my particular case study, I also reviewed literature on the topic of writing and writing in relation to children considered gifted. To review the articles, I critically evaluated the methodology, framework, and findings. I organized the articles under the following five inter-related themes: affordances of drawing; the visual-verbal relationship; writing; new literacies and learning disabilities; and multimodal pedagogy and assessment.
2.2.1 Affordances of Drawing

Gunther Kress, a leading researcher in the field of social semiotic theory of multimodal representation and communication, argues that we have become a visual society and that the dominant mode of communication, “visual language,” is now controlled by global and technological advances (Kress & van Leeuwen, 1996). With multimedia and the screens that surround us, the “logic of image” will have an even stronger influence on how we shape and engage in print literacy practices (Kress, 2004). The relationship between word and image is already more complex than even a decade ago (Jewitt, 2005; Kress & van Leeuwen, 1996).

There is a growing body of research that examines the ways in which children use drawings to express their understanding of complex concepts, thereby, bringing their understanding to a higher level than through words alone (Brooks, 2005, 2009; Cox, 2005; Hopperstad, 2008, 2010; Kendrick & McKay, 2004). These studies demonstrate that drawing is an effective tool in a child's construction of meaning and that learning, negotiating, and reconstruction of knowledge happen on both an interpersonal and intrapersonal level and are culturally specific. Additionally, they reinforce and challenge educators to look at children's drawings not as stage development but as part of a broader meaning-making system that has a purpose and where the children are in control (Cox, 2005).

Brooks' (2005, 2009) visual ethnographic study looked at the drawing process of twenty-two children from her grade one classroom in Alberta, Canada to better understand how children used drawing to explore their personal ideas about light. Her focus on one boy, Ed, and how he used drawing to spatially explore the physical aspects of a flashlight and the concept of “on” and “off” (2005), as well as exploring the details of the shadow of a bike
rack (2009) helped him move from spontaneous concepts to scientific conceptual understanding and thus higher level mental functioning, as described by Vygotsky (Brooks, 2005, 2009; John-Steiner & Mahn, 1996). Brook’s observations also lead her to extend Vygotsky’s theory of interpersonal and intrapersonal meaning of interactions, from verbal to visual thought, suggesting that since art is also a type of language, then it is a valid method of thinking and making meaning. She refers to Vygotsky’s notion that thought is “both whole and simultaneous. It is not always connected to speech” (Brooks, 2009, p.3, citing Vygotsky, 1968) to suggest that since drawing can also present information holistically, it is in fact more closely connected to visual thought than speaking is.

Kendrick and McKay (2004) were able to attain a richer analysis of children’s drawings compared to Brooks, by referring to Kress and van Leeuwan’s (1996) multimodal framework. Their study showed how the affordances of drawing allowed five and six year old children from two primary classrooms to conceptualize and represent themselves in relation to literacy that goes beyond the traditional forms of reading and writing. The drawings provided a glimpse of the children’s complex understanding (and imagination) of literacy in their daily lives outside of school which included activities such as music, writing, theatre, and even hunting. The researchers concluded, from their discovery of what children could express through an alternative form than writing, that by relying on one sign-system in school, students are restricted in what they communicate. Educators need to understand that children activate meaning differently between the home and school contexts and that this plays a part in a child’s development, and these differences need to be taken into consideration (Hull & Schultz, 2001; Kendrick & McKay, 2004; Pahl, 2001, 2002; Ring, 2001; Taylor & Dorsey-Gaines, 1988) if educators are to also better understand how children
Another key point from Kendrick and McKay’s work (2004) was that it was through the discussion with the students that the researchers were able to gain further, valuable insight from the children’s drawings; it was the discussions that allowed them to see elements of the students’ cultural identity and social status embedded within their texts. Discussion as a method of assessing children’s understanding could be extended to learn more about students’ exploration of complex concepts, much like the scientific concepts of “light” and “shadows” in Brooks’ (2005, 2009) study.

It is easy to see how children project themselves into their drawings when looking at their art. For some, it is the medium through which their voices can best be heard. At a school in Cyprus, Greece, it was through drawings and discussions that Angelides and Michaelidou (2009) identified which children felt marginalized, be it academically or socially, at school. Drawings they examined included ones like that of a lone rabbit that was drawn off to the side and away from the crowd; a lone sailor sitting in a boat; and a drawing of a girl next to a big, bright sun, her only friend, all of which indicate the children’s sense of isolation from their peers. Students’ drawings not only help us understand how they are developing in their learning, but are also reflective of what they are (emotionally) experiencing and can be used as a communication tool. Essentially, drawings can inform us greatly about children’s perception or understanding of reality as they see it, which a purely language-based assessment cannot always do (Kendrick, McKay, & Mutonyi, 2009).

It seems apparent that to truly understand children’s perception of reality as they demonstrate in their drawings (or any form of art), the process must be observed. Looking only at the product can be a limitation (Levin & Bus, 2003; Norris, Mokhtari, & Reichard, 1998; Ormerod & Ivanic, 2002; Yang & Noel, 2006), as was highlighted by Yang and Noel’s
(2006) study on examining the link between drawing and emergent writing in four and five year old children. Yang and Noel aimed to discover the characteristics of spontaneous drawings and writing of young children. However, by only looking at the final product of archived drawings, they were forced to throw out what they interpreted to be meaningless data because they did not understand the context behind it.

All of the studies discussed up to this point clearly demonstrate the value of drawings and that drawing is a personally invented symbol system, and if a child is motivated and enjoys using this mode of communication this can help reduce the cognitive demands for that child (Caldwell & Moore, 1991). In other words, if a child with a writing disability was to rely solely on print in their text-making, and with the understanding of the extra amount of mental energy this student would need to stay engaged in the complex task of writing, it seems common sense that children allowed to incorporate their preferred system of representation into their learning will feel more confident, and they will be able to explore and develop their thinking more easily than if not. This also means a more fulfilling educational experience for potentially marginalized students.

2.2.2 Visual-Verbal Literacy Connection

2.2.2.1 The drawing-writing relationship

Drawing is universal and as instinctual as language (Sheridan, 2002). So, what is the relationship between children’s drawings and writing and how does this relationship aid in a child’s “journey towards the graphicacy club” (Anning, 2003, p.5)? Do drawing and writing co-develop or develop separately? According to Sheridan (2002), early drawing or mark-making helps children develop their thinking. She compares the idea of a mother rocking her baby to sleep, which helps the baby tune and develop his or her aural organization for sound,
to that of scribbling which helps a child tune his or her brain to other “literate frequencies.”

Vygotsky (1978) viewed drawing as the pre-cursor to the development of writing, meaning that children first draw pictures of objects before the drawing of words. Nowadays, researchers believe this theory is too simple, for how do we determine the cross-over point? Many researchers propose that children know the differences between the two notational systems as they have “implicit knowledge” (Brenneman, Massey, Machado, & Gelman, 1996). Brenneman et al. (1996) discovered that children's actual behaviour during their writing and drawing differed, in that children as young as four or five years old would not only handle the paper differently, but they verbally described their drawings differently compared to when they described their written words. Also the style and type of marks they made differed accordingly and so now it is believed that they are different processes that develop co-currently (Brenneman et al., 1996; Lancaster, 2007). Similar to language, drawings have a complex grammatical system that is rule-bound (Brenneman at al., 1996; Kress & van Leeuwen, 1996; Lancaster, 2007). Cox (2005) proposed that “in playing with the process, children are actively defining reality rather than passively reflecting a given reality” (p. 115) and this promotes a child's thinking to move between perception and conception (Brooks, 2009; Cox, 2005; John-Steiner & Mahn, 1996; Vygotsky, 1978), which is integral to a child’s learning.

Although not solely focused on examining drawing, Wohlwend's (2009) analysis of children's play-based literacy interactions in the kindergarten and primary classroom involved children exploring the social possibilities of the images they created. In two school districts in the Midwest United States, using case study methodology, she employed a multimodal semiotic analysis as well as mediated discourse analysis on the interactions
between five, six, and seven year old children. Her goal was to better understand how these children used the modes of drawing and playing as spatializing literacies to navigate through imagined technologies and engage in user identities.

Wohlwend (2009) also emphasized the role of talk as an important co-emerging mode in text-making. With one vignette of a group of boys, she witnessed their creativity and engagement with a video game they “played” on paper. She was able to hear the discourse and see the “game” moves that built upon each other (the squiggles). She was able to listen to how the boys negotiated and discussed ways to continue the “story” as opposed to ending it.

The accompanying verbal communication, or “talk,” that happens alongside children's drawings (or any literacy practices), be it by the sign-maker or any influential “significant others” (Ring, 2001) such as adults, peers, or siblings has an impact on children’s meaning-making (Ring, 2001, 2006; Taylor, 2006). These impacts can be positive or negative depending on both what and how it is said. The impacts are also affected by the teacher-student power relationship (Peirce, 1994) and teachers need to realize the power they hold, which can affect a learner’s investment and potential marginalization. For example, the teacher response, “Are you sure this is your good copy?” can insinuate to children, who personally believe they put their full effort into the writing task, that their work is not satisfactory and this can affect their confidence and they can feel defeated. Teachers should find balance between safely supporting children's freedom in exploring meaning-making possibilities versus properly scaffolding them through the process.

2.2.2.2 Technology, multimedia, and multimodality

Drawing in the traditional sense with pencil and paper (or crayons, paint, etc.) is just one form of image-making for children. Nowadays, one cannot discuss the visual-verbal
literacy connection without referring to the role that multimedia play in the daily lives of children. Even though children still enjoy drawing, computer or digitally-generated images are equally, or perhaps, more appealing. It is important to remember that even in today’s day and age not every family has access to all of the techno-gadgets, computers, and digital tools available, but for the many who do, this has led to children being well versed in technoliteracies and at a very early age (Wohlwend, 2009). Over the past decade a significant amount of research has looked at digital technology and the features that intrigue children and how it has affected the word-image relationship. Carey Jewitt, in particular, has carried out several studies looking at the relationship between image and print in relation to the communication landscape of the 21st century. Using a multimodal analysis, Jewitt (2002, 2005) explored how this relationship is dependent on context and curricular goals in today’s school literacy practices. Looking at CD-ROMs in a Year 7 science classroom and a Year 10 English classroom, she found the “screen” was a main medium of communication and that images were predominant in both lessons and were the main carrier of meaning. For example, two screens in the science lesson seemed to separate the functions of word and image, with one screen allowing multimodal exploration to occur and the other being reserved for scientific labeling. For the CD-ROM version of the novel, *For Mice and Men*, in the English class, she also noticed images took up over half of the screen and decentered writing. She questioned how the “breaking up” of the narrative on screen affected how children read and interacted with the story. She concluded that technology has ultimately led to the “visualization of word” (Jewitt, 2005, p. 320), indicating that it is possible to take away the content of writing and still have meaning. For example, Jewitt (2005) goes on to explain how the visual features of typography can affect the reader’s interpretation of text. In the CD-
ROM, *For Mice and Men*, a handwritten looking font was used for fictional information and to indicate a human presence, whereas a typewriter-style font was used to present factual information and created a more distant textual-positioning with the reader.

It has been reiterated several times throughout this chapter that it is difficult for a teacher to fully appreciate how a child is critically engaged with modern day text-making unless he or she is looking at the process. Both process and product are essential and considering both when assessing a child’s learning will enable teachers to appreciate the complex, creative, and innovative ways that students compose texts using popular culture and multimedia as their sources of inspiration. For example, two terms used to describe the types of digital texts children create are *hybrid* and *remixed* texts. A hybrid text is the result of integrating traditional and contemporary ways of composing. The NLG defines these texts as “articulating in new ways, established practices and conventions within and between different modes of learning” (Cope & Kalantzis, 2000, p. 30). *Remix* literacy describes how children construct new meaning through recreating or redesigning by copying and pasting together bits and pieces from other multimedia texts (Gainer & Lapp, 2010; Hockly, 2012).

Iyer's (2007) example of hybrid texts came from her observation of ways through which an Australian teacher used ICTs in a grade one classroom when integrating traditional print-based learning and new technology. Children incorporated their background knowledge of Western fairytales, while engaging in the new medium of digital storybook technology using PowerPoint and Paint software tools. Through the co-creating process they came to understand narrative genre and text composition. The multimodal qualities of this digital storytelling learning experience supported the diversity of the learners making it a meaningful and engaging activity that allowed identity formation and sense of agency to

Digital storytelling has become a common topic of interest for researchers learning about the innovative ways students are “writing” texts nowadays (Hull & Nelson, 2005; Iyer, 2007; Nixon, 2009; Ranker, 2007, 2008; Ware & Warschauer, 2005). It involves incorporating various designs including image, sound, technology, language, and spatial modes and helps a student learn new genres and discourse(s). It has proven to be an effective method to help teachers bring digital literacies into their teaching beyond using them merely as a teaching aid (Iyer, 2007).

To support the fusion of traditional and new, a metalanguage is necessary. This can help solidify an understanding of how digital literacies are conceptualized nowadays (Hockly, 2012) and how they play into the current verbal-visual relationship. Teachers may also see the benefits of incorporating hybrid and remixed texts into the classroom, which has proved to be an effective way to reach marginalized students (Ranker, 2007). Previous to undertaking his case study, and when he was his teacher as opposed to the researcher, Ranker (2007) employed multiple strategies to persuade his student, John, to become interested in writing. He admitted to seeing John's writing as merely replicating a cartoon television show and it was not until he took a detailed look at the process that he began to see the complexity which underlined his student’s work. Helping students cultivate their multimodal text-making skills allows the (marginalized) student to see greater success, gain better access to the curriculum, and leads to increased motivation and participation.

The non-linearity in children’s methods of execution, when composing using multimedia and technology, stands out in the research and is an area for further investigation. Working step by step is easily monitored and assessed by the teacher, but this is not always
the way children go about their thinking. In another case study, Ranker (2008) demonstrated the non-traditional qualities of writing which seem second nature for two male students, in grade five, in a public urban middle school, as they compose a digital documentary video on a topic of personal interest. Examples like these, force us to rethink how to teach writing in the classroom.

Several researchers refer to Bakhtin's theory of discourse (Ranker, 2008, citing Bakhtin, 1935/1981), when describing how remixed texts are composed. Bakhtin implied that each utterance, including even a single word, “is ‘multivoiced’ because it draws on existing genres of speech and action and also responds to a social context that may include concrete others” (Hicks, 2000, p. 228). An individual's discourse(s) is hybrid in nature as it reflects the value and belief systems of the social communities to which that person belongs (Hicks, 2000). By extending Bakhtin's theoretic framework of dialogism to account for the ways in which his students' novel texts were a response to others' texts, Ranker analyzed each “literacy event” by viewing it as having a dialogical relationship to both previous and future literacy events. Briefly, dialogism refers to the fact that “nothing is in itself.” (Holquist, 2002, p. 41) but is a result of interconnections; thus, meanings made in the past through dialogue can be brought back into the present, renewed, and ultimately transformed into someone else’s new meaning. This explains, in Ranker’s study, how multiple “voices” interrelated, shaped, and were reflected in the new composition. So, while questions regarding creativity and genuine authorship are presently being raised surrounding discussions on remix literacy, one must remember that knowledge is built upon what has been learned from others.
2.2.3 Writing

2.2.3.1 A neurological perspective

It can be difficult for those who find something easy to do, to understand why others find the same thing especially challenging. Such is the case with writing. For many people, it comes as a natural form of expression to them. For others, it is a constant battle and for some young students it becomes increasingly frustrating for them as they become older. Children who are diagnosed as having a written output disorder, yet who also demonstrate through testing that they are superior in intelligence and have an advanced oral vocabulary, strong expressive and receptive language scores, and a good memory, can become particularly frustrated with why they cannot “get it.”

To gain a better understanding of the reasons behind some children’s frustration with written expression it is imperative to reflect on what writing is all about. Compared to the reading process, the complexity of the skills involved in writing has been studied far less (Hooper, Swartz, Wakely, de Kruif, & Montgomery, 2002). This means these complex skills in relation to children with writing learning disabilities, including children who are dual-exceptional, are equally understudied (Yates, Berninger, & Abott, 1995). Looking at writing from a neurological perspective may help provide some insight, for it is understood that there are underlying neurological differences in the brains of those with a learning disability.

Writing is not an innate skill like that of oral language. The technology of letter symbols, or pictographs, linked to sounds started around 2000 B.C.E., with the first Semitic-language alphabet evolving in Egypt (Sacks, 2003). This alphabet has drastically evolved in fascinating ways over the years. People may erroneously assume that writing is similar to reading, or perhaps is the inverse of reading, “in the sense that division is the inverse of
multiplication” (Berninger & Richards, 2002, p. 169 citing Read, 1981). However, because a child can read does not automatically mean he or she has the ability to write. In order to grasp a better understanding of the neuroscience behind the structural and functional organization of the brain for writing, Berninger and Richard's (2002) book, *Brain Literacy for Educators and Psychologists*, was referenced.

Berninger and Richard (2002) indicate that handwriting, spelling, and composition are separate components of development of the writing system and do not develop the same way or even concurrently. Writing demands more than visually recognizing features of letters. It involves visual-motor skills and being able to sequentially plan out and produce each little stroke of a word. The writer needs to be aware of the size and spacing of letters and to make sure they are correctly lined up and in the proper spot on the paper. In essence, writing demands visual-spatial processing and visual-spatial awareness that is more complex than that needed for letter recognition in reading words.

Spelling requires a child to navigate between phonemes and their corresponding symbols. This can be disconcerting for those who do not feel competent in their knowledge of the sound-symbol relationships in the English language. There can be numerous options of variants (symbols) that match certain sounds. For example, the sound /oe/ can be spelled as “oe, oa, o_e, ow, ough.” Likewise, a certain symbol can have more than one sound option: 'ea' can be pronounced /ee/, /e/, or /ae/. There is an ambiguity to the symbols used to represent sounds because there is no clear link between the symbols we use in written language and their meaning (Dyson, 1991; Kress, 1997).

Both writing and reading use the same non-language systems of memory and executive processing, but in different ways (Berninger & Richard, 2002). For the beginning
reader, the reading task is to decode the written word into speech and then draw on aural language to comprehend ideas in text. For the beginning writer, however, the first step is to generate ideas and the second task is to communicate them by drawing on aural, oral, and written language. Writing requires planning, translating ideas into text, transcribing text, reviewing, and revising, all of which require well developed executive functioning skills (Berninger & Richard, 2002; Hooper et al., 2002). Also, unlike talking, writing compositions typically entails children generating discourse on their own (at least in school). Co-collaboration and discussion can be very beneficial for individuals to explore their ideas to a greater depth than if left to think about their ideas quietly, by themselves.

Finally, writing is a type of problem solving, for which we rely on our working memory (Hooper et al., 2002). Writing places a greater demand on working memory than reading comprehension because of the constant need for creative output. This is an important factor for a teacher to consider when undertaking a multimodal approach. If working memory has limited “space” it is possible other modes demand less working memory and could free up mental energy, thereby increasing motivation. That is, a child who struggles with print and has poor working memory is considered to be working harder than the average student who does not struggle in these areas, due to the complexity of the processes described above; they may become fatigued, act out, or disengage as a coping strategy. Teachers who understand the vulnerability that students with a learning disability have to overloading their working memory or “problem solving space” might be more understanding and see value in allowing other modes of expression. Teachers of students in the intermediate grades need to be more aware of this issue because letter and word production are expected to be automatic, thus
allowing more space in working memory for other high-level thinking tasks, including self-regulation of the writing process (Berninger & Richards, 2002).

The purpose of looking at writing from a neurological point of view is to better understand how a multimodal approach can better support children with learning disabilities and supplement traditional print literacy. Similar to the discussion on technology, teachers need to understand their learners and promote and support the use of multiple modes and literacies in their learning. A teacher needs to know the potentials of learning resources, but they should also be aware of the learning potential of their learners.

2.2.3.2 Writing and children diagnosed as gifted

It is difficult for some people to consider a so-called gifted child as also having a learning disability (Assouline, Nicpon, & Whiteman, 2010; Brody & Mills, 1997) as they assume that they are uniformly gifted across all domains. While there is scant research on the subject and how to properly address the needs of children who are gifted, over the past few decades it has become common knowledge and seemingly more acceptable that a person can be both gifted and learning disabled (Assouline et al., 2010; Brody & Mills, 1997). Regardless, the majority of those identified as being both gifted and having a learning disability still continue to be overlooked and considered as underachievers, lazy, and unmotivated (Brody & Mills, 1997).

Unfortunately, by not addressing this group of the student population appropriately, the school system is creating a “wait-to-fail” approach, meaning that support is only provided once these students really start to fall behind their peers and begin to perform below grade expectations (Assouline et al., 2010).
The situation is a complex one and rests on the fact that if a child presents in school, or on standardized tests, as average in academic and cognitive ability, then it is assumed there is not much to worry about. Assouline et al. (2010) argue that two things can happen with this mentality. Either the learning disability may be severe to the point that the child’s exceptional abilities are actually overlooked, or the child’s exceptional abilities are actually compromised by his or her disability which hides where his or her talents and strengths lie, making him or her appear as average. Usually a weakness becomes the focus. Unfortunately, there could be negative emotional and behavioural consequences as a result of not dealing properly with these children (Brody & Mills, 1997). It is very frustrating for children who are bright and have high verbal ability to not be able to express themselves in writing. The gap between what they show and what they know affects them deeply, especially in social-emotional ways (Brody & Mills, 1997).

2.2.3.3 Future of writing

Considering the changes that writing has undergone over the past few decades, some researchers are curious about how it will continue to evolve (Bezemer & Kress, 2008). Perhaps the most intriguing area of development will be the differences between writing on-screen compared to on the page.

As mentioned previously, writing in the past was traditionally taught as a linear process involving a series of steps. For those classrooms which still use this approach today, reconsideration should be taken because it no longer seems justified. It gives the impression that there are developmental stages a child goes through as they grasp the understanding of written language (Dyson, 1991; Graves, 1981, 1983). This very structured, linear, and laborious approach to writing is seldom motivating to children with a learning disability and
is problematic (Dyson, 1991). Again, perhaps the ways the screen will shift writing in the future will help bring about greater change as it appears to better support the recursive nature of writing for some individuals.

Current research is shedding more light on the details children focus on and the crucial decisions they make that guide the creative process on screen compared to on paper. In a small exploratory study carried out by Burnett and Myers (2006) in the United Kingdom, twelve children ranging between the ages of eight and ten years were observed composing on-screen using email, PowerPoint, and Microsoft Word. Using Kress and van Leeuwen's (1996) framework, the researchers took notes on the visual, linguistic, and physical features of the children's projects.

When using PowerPoint or Microsoft Word, the children paid particular attention to visual detail such as the layout, font, and framing of their project. Another key observation made was when children were at a loss with what to write. Similar to how children may scribble on their paper when they are stuck, it was observed that children “doodled” on the computer, using the computer mouse. This involved quick deletions, insertions, and changes, whether it was for changing font size, alignment of headings, or inclusion of pictures and this type of doodling experimentation was most critical near the beginning for students to get settled into the task. The researchers explained that the students’ experimentation and manipulation with textual and visual features was a form of revision. They also concluded that the screen provided the students with a more objective look at their work, and allowed them to revise their work more easily.

The use of technology is becoming more the norm and being advocated as a way to improve writing, but there is caution to be had and one must be wary of how truly effective it
is in today's classroom (Wyatt-Smith & Elkins, 2008). It is easy to assume that simply allowing students access to computers and multimedia will help them reach their potential, yet one must not forget the importance of scaffolding, modeling, and supporting a child's learning with these learning resources. Similar to what research states regarding reading online, that while it is highly motivating and good for improving basic skills, it is not great at improving higher critical literacy skills (Wyatt-Smith & Elkins, 2008). Therefore, neither will computers nor computer programs automatically make a child a great organizer or fluent writer. Computers do not necessarily increase one’s working memory or processing speed even though it might allow a person, with strong typing skills, to produce more “quickly.”

There is more to writing than simply writing thoughts down. Writing in relation to multiliteracies, multimodality, and learning disabilities is definitely an intricate, complex, and layered phenomenon.

2.2.4 New Literacies and Learning Disabilities

Viewed from a sociocultural perspective, a learning disability can become less “visible.” Vygotsky saw a disability as resulting from the child's development taking a different pathway than the majority, and this pathway had two components (Bodrova & Leong, 2007). The first component was the primary disability, which was biological and innate and could not be “fixed,” whereas a secondary disability could occur as the primary disability interacted with the social environment of the child. Depending on the socio-cultural background of the individual, the disability would either be something that was realized and needed to be remediated, or it could go unnoticed as the child did not require cultural tools for it as there was no disruption to the higher mental function skills (Bodrova & Leong, 2007). In our society, print is a highly valued form of communication and children who
struggle in this area are forced to confront their deficiency and are referred for professional assessments. This can result in a specific label being applied to these children which can affect numerous aspects of both their social and educational life, including their formation of identity and sense of agency. However, if these same children were born in a rural country setting where their culture and life routine were all about working hard out in the fields and taking care of family, then struggling with knowing how to write would not be an issue and no one would know whether they had a writing disability or not.

Little research in the area of new literacies has focused on students with learning disabilities and the few articles that do shed light on the subject provide a strong argument for the need to further explore this area. Most articles that look at special education and other modes of communication, for example digital technology, look at how they can help children cope with print-based tasks. Unfortunately, this does not help teachers to truly capitalize on the potential that new literacies create for students and their learning. Teachers need to look at technology as more than just:

Tools for access but also in designing instruction that allows a connection based on socio-cultural perspectives and out-of-school technology usage, leading to increased engagement and relevance for students. This can be done through learning about and implementing new literacies strategies and using them in combination with teaching strategies currently in use in special education classrooms. (Provost & Babkie, 2009, p. 140)

Many studies have successfully shown how drawing (or art in general) can help students who are not strong with their reading or writing abilities learn (Bitz, 2004; Sidelnick & Svoboda, 2000; Taylor & Dorsey-Gaines, 1988). It can also be very motivating for
students deemed at-risk. For example, by taking popular culture into account, students who were low achievers from inner-city urban schools in New York City became engaged in their learning and raised their reading and writing skills through creating comic books (Bitz, 2004).

Acknowledging a student’s interests and strengths is generally a strong motivating factor. Despite formal testing showing an eighteen month discrepancy between an eight year old girl’s chronological and mental age, Sidelnick and Svoboda’s (2000) qualitative case study showed how by building on her strong visual-perceptual skills and recognizing she identified with being an artist helped her transition from verbal to written expression in the school context.

Utilizing both drawing and writing can strengthen the “neurological bridge” (Vincent, 2006) and help children navigate between the ideas in their head and getting them onto paper. According to Vygotsky (1978), drawing and speech go more hand in hand than speech and writing because “teaching writing is based on artificial training” (p. 105) as opposed to oral speech and drawing (or mark-making), both of which are innate and children naturally develop and master.

Finally, Nixon's research (2001), which arose from a three-year longitudinal study, looked at the literate practices of students in a middle primary school from South Australia. She focused on one case study to demonstrate how it is possible to make “visible” different kinds of literate practices and student achievement, depending on the forms of literacy assessment and the teacher’s personal values and beliefs. This follows Vygotsky's theory that a child’s disability is dependent on cultural and societal norms. A teacher will make a judgment on a child's cognitive-learning profile that is a result of whether the teacher sees the
child engaging in, what they consider to be, favoured literacy practices. Nixon touches upon the fact that subjectivities of teachers’ perceptions of their students can affect a child’s identity and the way he or she learns at school. For example, relating back to Dyson (1993), if a child does not feel successful in navigating the social worlds of the classroom and struggles with understanding the genres of those social worlds, this will affect his or her identity and sense of agency.

2.2.5 Multimodal Pedagogy and Assessment

Researchers continue to address the idea of how it may be possible to accept children's multimodal texts into the curriculum. For example, both Bearne's “common discourse framework” (2009) and Millard's “literacy of fusion” (2003) indicate a need for a transformative pedagogy and, together, build upon the argument that a common discourse, or metalanguage is first necessary so that it is shared by educators to describe multimodal texts and to allow more flexibility in assessing students.

Bearne (2009) refers to social semiotic theory to support a common discourse framework. Her descriptions and analysis, from her ethnographic study of three children's multimodal “performance” texts, are very comprehensive and thorough. For example, in regards to the mode of image a teacher can assess the content, size, colour, tone, line, and placing of space of a child’s picture. For sound, a teacher can assess the qualities of content, emphasis, volume, vocal intonation, pause, and pace. The framework, as a whole, requires significant time to implement. Considering the reality of the classroom, one must think about how user friendly it is. Would teachers understand how to use such a description as a means to assess a student across the curriculum? How would the framework account for grade level expectation differences as children progress through school?
Another factor that should be considered when using this framework, and which did not seem to be taken into account, is the socio-cultural background not only of the students, but the teacher as well. Neither Millard nor Bearne do not directly address this. How a text is analyzed is affected by the value and belief systems of the teacher (Nixon, 2001; Pahl, 2009). Depending on their background, different teachers may place varying levels of significance on the components of description according to what they deem important. Can it be expected all second language learners will maintain a “clear, even tone and volume” as Ritchie’s narrative was described in Bearne's study (Bearne, 2009, p.169)? And what about students with learning disabilities who may struggle with verbal fluency, or who may have a sequencing processing disorder that may affect their texts and oral presentations in other subtle ways?

Millard (2003) does not use descriptive criteria for analyzing texts, but proposes six aspects: access, arena, agency, affordance, appropriateness, and accountability, for helping to bring about a transformative pedagogy for teachers to consider when lesson planning. In some ways she addresses socio-cultural backgrounds more so than Bearne, by acknowledging literacy practices and events at home and how they transfer to school. The article makes a strong and valid argument regarding the need for a framework; it would be beneficial for teachers to now implement this framework and for researchers to learn how they use it. Most importantly, in what ways would teachers apply it to children with learning disabilities or who need enrichment?

Even though subjectivity of assessment is always an issue, regardless of the method, it is important to make sure that a multimodal assessment or pedagogy framework is versatile and supports diversity, especially cultural and learning differences (Bearne, 2009). Bearne’s
and Millard’s articles suggest that it is possible; it would be beneficial to now implement these frameworks and observe how effective they are and further develop them.
Chapter 3: The Participant(s) and Research Methodology

3.1 Introduction

This chapter introduces the main participant, Jacob, and his family and describes the process of recruitment, the home context, and where the sessions took place. Next, it provides a brief overview of some of the participant’s formal assessments in order for the reader to have some background and understanding of the participant’s experience with writing and to better understand his strengths. This chapter also discusses the researcher’s positionality and the research methods used for the procedure, the gathering of data, and data analysis. The gathering of data included ethnographic interviews, participant observation, and the collection of artifacts. The data were analyzed using multimodality analysis, as I adapted from Gillian Rose’s (2001) visual methodology approach.

3.2 Recruitment

Recruitment happened by word of mouth. The nature of my job means that I am in regular contact with families who know of or have a child with a learning disability. When I talked to parents I made it known that I was interested in working with a child I had not taught and who had not attended a school at which I had worked. This was to ensure I did not engage in a conflict of interest. Eventually, through my personal contacts, I was made aware of a family who might be interested in participating. Through our common contact the family was told of my research study and given a brief abstract to read over. It was left up to them to contact me should they wish to proceed. An initial meeting with the mother took place at a local coffee shop of her choice where we sat down for around an hour and became acquainted. We discussed in further detail the study and her interests and hopes for what the family could gain from the experience. The mother was very open and welcoming and looked
forward to any insight or advice I could provide for her and her son. She came to our meeting prepared with formal assessments and diagnosis so I could gain a better idea as to whether her son did, in fact, meet my criteria. It did not take long for me to realize that her child would be a great candidate. Upon my first official visit to the family home, another discussion with all the family members took place. During the conversation the purpose of the study was discussed as well as what would be expected, the significance of the study, and the procedure. It was emphasized that confidentiality was of utmost importance and that, to the best of my ability, nothing that would reveal their identity would be included in the final paper. They were then free to ask questions. Both parental consent and child assent forms were signed and collected at the following visit to allow them time to still reflect about whether they would like to participate.

### 3.3 Jacob's Family

The family in this study is close-knit and very nurturing and supportive of one another. It consists of eight year old Jacob, his fifteen year old sister, Samantha, and his mother and father. The parents promote and support the children, both in their academic pursuits and in their extracurricular interests and hobbies. In fact, both children come across as highly intelligent and well-rounded individuals of strong character and opinion. There were a few instances where I found myself engaged in mature conversations with them about various political and current events that I would not have expected to have with either an eight or fifteen year old.

Both parents are educators and are familiar with the school system. They both have very demanding jobs; however, even with the intensity and time consuming nature of their careers they endeavor to be there for their children first and foremost. In essence, they are a
busy, but very productive family. The parents have been strong advocates for their son over the years and continue to do all that they can to help Jacob, especially in finding proper support, but it is a constant battle that has proven challenging to deliver hoped-for results. Frustration was evident during my initial meeting with his mother as she discussed the ups and downs and the emotional toll she has experienced over the last few years dealing with Jacob's schools. I was thankful she felt comfortable to share all that she did with me and to disclose reports that might be of help to my better understanding her son. From that initial meeting, I was very intrigued to meet her child and to see if I could be of any help.

My observations in the household showed that clear expectations for the children were set in regards to homework and other responsibilities, including when Jacob was working with me during our sessions. He was to use his time wisely, and if he needed to leave the room to find a pen or pencil the parents would quickly help him find one and hurry him back to me. Even his sister, when she was left in charge while the parents went out to quickly run an errand, would have an ear tuned in to him, making sure he was on task. In a very caring and tender way, she helped get him back on track a few times with me. Overall, it was easy to enter into conversation with any member of the family. They were genuinely interested in what I was doing, and keen to see if I could, in fact, help Jacob (and all of them) discover how he learned best and suggest or provide insight on new ideas that might aid in his educational journey being a successful and motivating one.

3.4 Jacob

Jacob was eight years old, in his third term of grade three when I first met and began working with him. When I first encountered Jacob, I immediately took notice of his easygoing attitude and positive spirit. He was calmly sitting on the couch, next to his sister,
dressed in his cargo pants and a t-shirt with his hands clasped in his lap. He had a smile on his face and did not exhibit any sign of apprehension or anxiety. In fact, it was quite the opposite. He had obviously been prepared for my visit by his parents, and was very welcoming and warmed up to me immediately, bouncing right over and sitting beside me on the floor to show and explain to me the prepared pile of personal articles of interest which reflected his fascination with Ancient Rome at the time. He was especially excited to show me his 3D cardboard model of the Coliseum as well as his ancient Roman newspaper, a perfect example of his multimodal text-making, which he created for his own pleasure. He was very proud of this piece of work and made sure to see that I took his coloured copy home. Jacob enjoyed sharing his knowledge and through our first meeting, I could tell he was very intelligent and had a great sense of humour.

3.5 Jacob's Home Environment and Neighbourhood

Jacob's house is a charming, older character house located on a tree-lined street full of other similar houses, located in Vancouver. It is fairly central in the city, being close to a few major driving routes. There is a community center a few minutes away and a small handful of parks in the surrounding neighbourhood. There is the typical corner store, produce store, and cafe shops nearby. When looking down the block, it is evident that the homeowners take pride in their neighbourhood and that there is a strong sense of community. It was not uncommon to drive up to their house and see the door open while Jacob or other family members were outside laughing and chatting with the neighbours.

It is a house that feels very welcoming upon entering. The household was also full of typical family activity as one might expect, for it was not uncommon to see the mother or father coming or going to run errands or otherwise be busy at work on the computer, while
simultaneously trying to get dinner ready as well as figuring out the next sports game schedule or Samantha's extra-curricular activities. When we had to book for our next session, both paper and computer calendars were referred to and they were always abundantly filled with tasks, classes, and events.

When entering the house there was a wooden cabinet next to the front door upon which was strewn keys, sometimes notes, books, or a few other odd bits one customarily throws down when coming home. Behind this cabinet was the main living area, which was where nearly all our sessions took place. This area consisted of two couches that sat across from one another and between which was a small area rug. On top of this was a chest which is where Jacob and I spent most of our time together. This working area was in front of the family TV and a large front window overlooking the street. Behind where we worked were the dining room and the entrance to the kitchen where a lot of family action would take place.

Due to the nature of my project and the parents' wishes (and their busy schedules), most of my sessions involved just Jacob and I. We generally worked together in the main living room while the rest of the family went about their daily business. However, the family was always available if Jacob needed them. Sometimes Jacob would go and fetch his sister to show her his work and get her reaction. His parents also never hesitated to come to the living room to answer questions or to engage in conversation with us. Sometimes the conversation would be a result of me asking a question pertaining to Jacob and at other times the conversation would be initiated by the parent(s) and would be in relation to school philosophy, Jacob’s teacher, or the quandaries they were facing with how to support Jacob at the time.
3.6 Jacob's New Literacy Activities in the Home

Jacob engaged in a variety of literacy practices at home. He dabbled in his personal art and writing journals, read books of personal interest, and played with the family's computers, iPads and iPhones. On most of my visits, Jacob was quite keen to show me something he had created and which was meaningful and personal to him, rather like a show and tell. The most memorable one was a picture he coloured and drew for his sister for her birthday which his dad had framed. It was a picture of his sister indoor rock climbing. On a separate occasion, it was a double page spread from his personal journal and a slideshow he had created on his laptop, for fun, of an ancient Roman battle using figurines. He also enjoyed sharing pictures he took with the camera I had lent him. I had originally asked Jacob to take pictures of his texts or work he might do in between my visits, but this never happened. He used the camera instead to take pictures of family outings or of his friends. For example, he came up with a game he called “camera tag” where he and his friends ran around the house and the person who was “it” had to tag another person by capturing a picture of them. Even though he did not use the camera for its intended purpose, it was interesting to see how the pictures reflected his various identities and the communities in which he participated.

In terms of his competencies with new literacies at home, I would say Jacob was very motivated by multimedia and technology. All digital devices intrigued him. His parents remarked how amazing it was to watch his capabilities and the ease with which he could navigate among and between the various devices. During one visit he had connected the laptop to the computer while also having the iPad beside him in order to show me just how fun it could be to play with computers. When I asked him if he felt he was an expert with
computers, he stated that he understood them really well and was the “best in the family with figuring stuff out.” His mother also remarked, in an email, that when attending an iMovie camp he was put in charge of helping the other children edit their movies since he understood the process so well. Jacob is a child who likes to take on leadership roles and technology is one area where he feels particularly confident with doing so.

Jacob's interest in drawing was evident throughout the house with his art (and his sister's) clearly displayed among other beautiful and worldly art pieces that his parents had hung on the walls. Both the children’s paintings and drawings were large and nicely framed, with their names clearly printed at the bottom. It was clear their art was valued in the house and considered equal to the other professional art pieces they had collected. I believe this partly led him to have pride in his work, as was evident whenever he shared with me his drawings and other multimodal texts.

3.7 Jacob's Psycho-Educational Assessment

Originally, I was seeking a student with a learning disability which was language-based. These students predominantly struggle in the areas of reading, writing, spelling, comprehension, or processing language in general. As it turned out, I became acquainted with a participant with a dual-exceptionality, who I have referred to as Jacob.

According to the B.C. Ministry of Education guidelines, at the time of testing, Jacob qualified for the “Q” designation for having a learning disability as well as for a “P” designation for giftedness (hence the term, “dual-exceptionality”). It was noted in the report that the gap between his superior intelligence and his academic achievement levels must be quite frustrating for Jacob. This type of cognitive-learning profile poses a great challenge for educators because not only do they need to support the student’s weaknesses, but they also
need to equally nurture and support his or her superior strengths. In the end, Jacob was a perfect candidate for my research project in that he satisfied both my requirements for age and for having been formally diagnosed with a learning disability and being of average to above average intelligence. Even though his strengths are in the language areas, he struggled with organization, written output, sequencing, and other tasks that I frequently tackle with the students that I teach.

At our initial meeting, Jacob's mother said she knew he was bright, creative, imaginative, had a strong vocabulary, and enjoyed learning (all of this was also quickly apparent to me soon after working with him). Yet, he struggled in certain areas at school almost from the beginning. She decided to arrange for the psycho-educational assessment during his grade two year to try and find answers. The examiner administering the assessment took notice of Jacob’s motivation to do well and to do all the tasks correctly, even alluding to perfectionistic tendencies. Where Jacob needed support and seemed to struggle more than his peers were in regards to writing and getting his work completed and finished on time. Both his parents and teachers had noticed early on that he was easily distracted and had difficulty with his organizational skills, needing ongoing support with attention and direction.

Jacob began receiving learning assistance in grade one. His mother also arranged for private tutoring outside of school. When I asked him if he liked school, he was fairly nonchalant about it, stating, “Yeah, I do...but it can be really boring, too. It depends on what's happening.” He did say that writing was hardest when he was in grade one, which was around the time his parents began to look into getting him assessed.
The purpose of a psycho-educational assessment is to gain a better idea of a student's intellectual, academic, and cognitive abilities. Assessments are administered by a psychologist, and through a number of standardized tests, areas of strengths and weaknesses are identified. This is followed by suggestions and recommendations for accommodations that may be appropriate for the student so that he or she may reach his or her potential and see success in school and, in some cases, even in daily life. Children with a learning disability tend to have significant discrepancies among their scaled scores and between their present level of ability and actual potential. The report itself is a dense document with specific jargon and statistical information that can be quite overwhelming for many parents just being introduced to the idea their child may have a learning challenge. Only some of the significant testing results, from Jacob's report, integral to my study will be summarized.\footnote{For a better understanding of the process of how a child is diagnosed for either giftedness and/or for a learning disability and for a list of the tests used in British Columbia please visit the British Columbia Association of School Psychologists (BCASP) \url{http://bctf.ca/uploadedFiles/Issues/Inclusive_education/Teaching_to_diversity/Resource_inventory/Special_Education/LD%20Guidelines%202007%20Official%20Version.pdf}} The table below (Table 3.1) presents only the percentile rank and description of his overall scores from the Weschler Intelligence Scale for Children-Fourth Edition (WISC-IV). These scores help explain the supposed unevenness in Jacob's academic performance.
Table 3.1: Jacob’s WISC-IV results

<table>
<thead>
<tr>
<th>Scale</th>
<th>Percentile Rank</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Comprehension</td>
<td>99.6</td>
<td>Very Superior</td>
</tr>
<tr>
<td>Perceptual Reasoning</td>
<td>91</td>
<td>Superior</td>
</tr>
<tr>
<td>Working Memory</td>
<td>63</td>
<td>Average</td>
</tr>
<tr>
<td>Processing Speed</td>
<td>16</td>
<td>Low Average</td>
</tr>
<tr>
<td>Full Scale</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

The WISC-IV (Flanagan & Kaufman, 2009) is a test for assessing the cognitive ability of children from six years up to sixteen years of age. From its fifteen subtests Index Scores and Full Scale IQ can be obtained. There are three subtests for Verbal Comprehension, three for Perceptual Reasoning, and two for Processing Speed. Again, for sake of space I will not be going into detail with each test or how the composite scores are reached. From the WISC-IV scores, Jacob shows strong verbal comprehension and perceptual reasoning abilities. On the other hand, he shows significant weakness compared to his strengths in the areas of working memory and processing speed (described as low average). The difference between his Verbal Comprehension (99.6\(^{th}\) percentile) score and the other scores was statistically significant in that Verbal Comprehension was much higher (p<.05); as well, his Perceptual Reasoning (91\(^{st}\) percentile) was significantly higher than Working Memory (63\(^{rd}\) percentile) and Processing Speed (16\(^{th}\) percentile). The difference between the Processing Speed scale and the other scores was much lower (p<.05) and also equally significant. In the end, a Full Scale IQ could not be validly reported because there were significant between-scale discrepancies and within-scale discrepancies (not reported here). In lieu of a Full Scale IQ, a General Ability Index score was used to check his general cognitive ability, which is quite common. Jacob’s GAI came out at the 99\(^{th}\) percentile, which
is well within the gifted range. His strong language skills and verbal abilities were further supported by his Expressive and Receptive Language scores. For his Expressive Vocabulary Test Jacob reached the 93rd percentile and on the Peabody Picture Vocabulary Test he reached the 88th percentile. In the end, his testing reflected a gifted/learning disabled (GD/LD) profile (Assouline, Nicpon, & Whiteman, 2010). According to the BC Ministry of Education, giftedness is defined as the following:

A student is considered gifted when he possesses demonstrated or potential abilities that give evidence of exceptionally high capability with respect to intellect, creativity, or the skills associated with specific disciplines. Students who are gifted often demonstrate outstanding abilities in more than one area. They may demonstrate extraordinary intensity of focus in their particular areas of talent or interest. However, they may also have accompanying disabilities and should not be expected to have strengths in all areas of intellectual functioning (BC Ministry of Education Special Education Services, 2011).

In my experience, working memory and processing speed are major contributors to children struggling in the classroom setting because they are what help the children keep up with the pace of the classroom. For example, if a child struggles with processing information she or he may find it hard to follow multi-stepped verbal instructions a teacher gives for a project. A weak working memory further exacerbates this struggle when students need to hold onto information in order to process it and problem solve. Timed activities such as in-class writing assignments, minute math drills, or tests do not bode well for students who have a slower processing speed either. When children who are GD/LD have a good memory, as does Jacob, and this is coupled with weaker organizational skills, this can impede their
memory giving the illusion that it is not that strong. This is because they are less likely
to chunk related information together, which allows their short-term and working memory to
hold greater amounts of information. This is why I believe activities such as mind mapping,
brainstorming, and using graphic organizers in general can be frustrating for these students
(especially if they are not scaffolded properly) even though they are equally useful tools for
them. For instance, if students have trouble retrieving and holding information in their
working memory, it can be challenging for these children to have to generate numerous ideas
(and usually in a short amount of time nonetheless) during class brainstorming sessions and
then work with those ideas to design a mind map; find connections; and sort through their
ideas and decide the main details they would like to focus on in their writing. Children who
do not have a language-based learning disability may equally struggle in these regards, but
for the child who struggles with working memory or other executive functions it can be
especially frustrating (especially for the student who is GD/LD). As was observed with
Jacob, he could have plenty of thoughts, but a graphic organizer that had a big bubble in the
middle, with several lines branched off it did not create a sense of ease. Even though it was a
visual resource for him, he had trouble initiating the task, sorting his thoughts, and finding
relevant information and the main ideas within his brainstorm.

What was interesting to read in Jacob’s psycho-educational report, and which echoes
what Assouline et al. (2010) discovered in their empirical study, was that when he was tested
for his Broad Written Language Skills, his scores came out as average. Even though this
appears as a non-issue, one needs to put this score into context. As the examiner observed,
Jacob needed persuasion to finish the test and only appeared to offer the bare minimum in
terms of response. One must look at both the comprehensive and individual scores of a child
who is GD/LD to understand the anxiety he or she may exhibit; it is common for students who are gifted to be overlooked if their writing is seen as average compared to their peers and if one does not know their other scores or strengths (Assouline et al., 2010).

In terms of additional testing, I was also provided with Jacob’s results from the Developmental Test of Visual-Motor Integration, which was administered by an occupational therapist (the date is not provided on the testing, but it was around the same time period as his psycho-educational assessment) to see what his ability was with copying geometric shapes and forms on paper. This involved looking at whether he could copy them accurately and in proper relation to the other parts, as this would be positively correlated to handwriting ability and other paper and pencil tasks. Overall, Jacob’s standard scores and percentiles were within average range. He was able to process visual information and detail at the 92nd percentile. The occupational therapist concluded he had the ability to be a good reader and strong visual learner. However, the therapist did mention that too much visual input could pose problems for his ability to focus (which could have explained his resistance to mind mapping). With good focus, his fine motor and visual motor systems worked well. Interestingly, it was mentioned that Jacob had demonstrated amazing work on the computer and that this would probably become a preferred tool for him and that he should be able to express himself in multiple formats.

A year after I began my data analysis, Jacob was in grade four and was reported by his mother as doing much better in terms of staying on task. His teachers noticed he had improved in spelling and reading; in fact, his parents were told he was at grade level. At the same time, his mother said not much new had happened in terms of support for Jacob and so they were dealing with the same battles. She also mentioned that Jacob still did not like
dealing with print, preferred to read books with plenty of visuals, and still jumped on the computer whenever given the chance.

3.8 Researcher Positioning

A researcher’s bias influences a study, even if in subtle ways. Analyzing qualitative research is a creative process and to help address credibility and strengthen the internal validity of this study, triangulation was used (Merriam, 1995; Patton, 1999). As well, I acknowledge from the outset my own personal experiences, assumptions, and biases related to the phenomenon I studied (Merriam, 1995). The social sciences and the nature of qualitative research methodology generally indicate closer proximity to the participants because the research happens in real-life context and is human-centered. Interaction, co-collaboration, modeling, offering positive encouragement, and conversations naturally occurred due to the nature of the setting and my research goals; at the same time they were also necessary to help motivate, build confidence, and in some instances aid the participant's understanding of the task at hand. My intention was to always be a very active participant-observer (Merriam, 2002).

This study was interesting because I was put in the position where I was both researcher and teacher-tutor. One of the reasons for the family agreeing to participate in the study was so I, being a teacher, could help their son improve his writing and perhaps discover ways to help support him with his school work. Even though Jacob knew of my dual role whenever I came to visit, he viewed me more as being a teacher-tutor. Throughout the entire study, he asked very few questions of my research. On a few occasions he showed curiosity and would ask me what I was writing down in my field journal, but after showing him, he did not seem interested and did not ask further questions.
I am aware of my influence and subjectivities on this study, which guided both my data collection and analysis (Lynn & Lea, 2005; Merriam, 2002; Peshkin, 1988). Inevitably, traces of my identity will have indirectly affected and become embedded into some of Jacob’s texts. I also entered into my study with the assumption that I believe other modes of communicating can help those children who struggle with print experience greater success in the classroom. Therefore, my personal bias is that I already believe there to be a positive link between my research questions and findings, which limits the objectivity in my study. However, Peshkin (1988) mentioned that sometimes a researcher's bias can be seen as “virtuous,” in that there can be positive effects and benefits. For instance, my presence kept Jacob focused and on track during moments when his attention would wane and he would become distracted. I was also an instant audience for him to show off his work and to share insights with. He enjoyed seeing my reaction and asking what I thought. My being there pushed him to follow through and complete texts that might have otherwise taken twice as long to accomplish on his own, or which may have veered off into an (irrelevant) direction. I also had him revisit some of his old texts and asked him if he would like to add more information. His mother said in an email, when I asked her to send me a digital copy of the original version of his Roman newspaper, that looking at it again made her see and realize what a good job Jacob had done. There is positiveness in this, if even for the parents and Jacob himself to remember what he is capable of and to visually revisit an example of some of his great work.

3.9 Research Methods

The overarching goal of this exploratory case study was to gain better insight and describe in detail how a child with an officially diagnosed learning disability in writing made
meaning during literacy practices and events, considering our print focused society. That is, in what ways did Jacob go about making meaning through multimodal texts as opposed to relying solely on writing as a key method to communicate and gain knowledge? The guiding questions for this study were the following:

1. In what ways do the visual mode of communication help motivate and support a child who has a writing learning disability engage with traditional, print-based texts?

2. How does a child with a writing learning disability use the interplay of word and image in text construction?

3. How does the visual mode affect the participant’s construction of his identity as a learner?

3.9.1 Procedure

This study was carried out using qualitative research methods, based on a single case study design (Bryman, Teevan, & Bell, 2009; Merriam, 2002; Yin, 2009, 2012). Using the inductive approach (Merriam, 2002), the intent was to provide a rich and detailed profile of one child, within his family context. Although the child was the main participant of the study, it was important to also include and consider input from the other family members to gain a holistic understanding of the participant and how he made meaning. Literacy is a social and cultural process, as well as a cognitive one, and it was crucial to understand the environment in which his (home) literacy practices transpired. It was equally important to look at those he interacted and collaborated with, within that environment (Merriam, 2002; Yin, 2009). Using a case study design was imperative as a research method and it is regularly used in the social sciences as it allows a researcher to observe within real-life context.
Due to the fact that the term 'case study' has been found to have had a range of definitions over the past few decades (Van Wynsberghe & Khan, 2007), for the purposes of this study, the definition I use is the one that relates to ethnographic research and studying complex phenomena in real-life settings. Technically, Yin (2009) states that a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” (p.13). For my purposes, it allowed me to observe and holistically understand the family dynamics and their relationships with each other and how they affected the son’s meaning-making within their social world.

3.9.2 Data Collection

Data collection consisted of participant observation, descriptive and reflective field notes, the collection of artifacts, as well as ethnographic and semi-structured interviews. Involving more than two methods of data collection allowed me to triangulate my results. Triangulation is a method commonly used in the social sciences and qualitative studies to validate findings and their credibility (Merriam, 1995; Patton, 1999); this also helped reduce any biases that may have resulted from this study being conducted by a single observer. It is always unknown in what ways a researcher’s personal values and beliefs may alter or affect the research.

Several times important impromptu conversations took place where audio recording was not used and I took shorthand notes which were elaborated and reflected upon in my journal immediately after the session. Turning on the audio recorder tended to be quite a distraction for Jacob. He would take several minutes to play with the recorder to make sure it was working right and for some conversations it ended up distracting him long enough that
he did not wish to go back to our original conversation. Digital photographs were taken of the texts and artifacts created by Jacob during the course of the study.

Data collection occurred in the family home and twelve sessions in total took place over eleven months from April, 2011 to the end of March, 2012. During the summer months, there were no visits due to family vacations and summer holidays. During data analysis it was necessary to have three follow-up sessions. Each session was usually around an hour in length. The maximum time allowed for each session was an hour and a half. I came to each visit prepared with ideas and activities for text-making, but my sessions were generally determined by what came up during the initial “warm-up” conversation with Jacob and his mother and the suggestions they might have. When I first began working with Jacob he was attending a mentorship program at the Vancouver School Board. The aim of this program is to provide enrichment for children who are gifted and allow them to work with experienced individuals in their area of expertise. He enjoyed this program because it provided an opportunity for him to research and learn more about Ancient Rome, and so for some sessions we would spend time working on his exhibition project. We would also work on his schoolwork, and at other times we would do activities or work on suggestions I had come prepared with. This allowed me to see Jacob engaged in text-making from beginning to end, rather than dealing with a half-finished product or having to rely on school expectations and criteria that controlled how the task was carried out. Especially during our initial sessions, it was imperative that I gain a clear sense of how he made meaning and used images for his own personal interest. Thus, my sessions were of an ebb and flow nature.

By using participant observation as a primary method to collect data, I was able to participate in various activities with the child. As it turned out, it was generally just Jacob and
I working together. There were a few instances, when I had just arrived, where I observed Jacob directly interacting with either his sister or one of his parents. Otherwise, the family went about their regular family activities as we worked. I did not do much observation from a distance. My time with Jacob was viewed as being precious and which Jacob must use wisely.

Arranging each visit was usually done at the end of a session or via email, the most convenient way for the mother to communicate with me. Like most families, their schedule was full and always changing. Thus, tentative plans would verbally be made at the end of a session and then followed up during the week over email. Weekly visits were the goal during the first three months of data collection; however, with the busy nature of the family's schedule this was sometimes impossible, and so there would sometimes be a week and a half or a two week gap between my visits. There was also a halt during the summer months followed by me visiting again in the fall during his grade four year. It did not take long for me to get to know and understand the family dynamics and establish a good rapport within the initial three months.

Semi-structured interviews were conducted both with Jacob and his parents in the family setting. Some of the semi-structured interviews with Jacob were audiotaped and later transcribed and others were not recorded due to a combination of high distractibility and impromptu conversations. Conversations with the parents were not recorded because, again, these conversations were generally unplanned since I did not know when they would have a free moment to talk. For example, a typical interaction might see us begin talking as I was halfway out the door leaving or while the family was getting ready for their next errand or event. Stopping everyone and pulling out my audio recorder seemed unnatural and would
I planned for my interviews with Jacob to take up to a maximum of thirty minutes, but they were usually finished within ten to fifteen minutes because Jacob did not elaborate much and he wished to move on to something else. The purpose of my interviews was to clarify my understanding of my observations, so that I could better understand the intent of his meaning-making. Upon my first official visit and before my weekly visits began, I held an initial interview to gain some personal information and to discover more about the participants’ personal beliefs and attitudes in regards to literacy, both at home and at school. The purpose of this initial visit was also to establish a good rapport with the child and his family. My initial interview was to be semi-structured and I arrived with some preplanned questions, such as the following:

1. How many brothers or sisters do you have and how old are they?
2. What do you like to do together?
3. What sorts of things do you like to do at home, which are fun for you?
4. Do you like to draw or use the computer? Why, or why not?
5. Do you like your school? Can you tell me why or why not?
6. What types of writing do you do at school?

I also had a list of typical questions to refer to that I could use during my sessions to help establish a domain for conversation to discuss the child's text and to understand his
personal interpretation of his texts. These conversations were of an informal and ethnographic style.

1. I am interested in what you drew here (indicate referent). Can you tell me about it?
2. Why did you decide to draw this (indicate referent) in that way?
3. How did you choose what to include in your picture/writing?
4. Why did you choose to use this computer program?

In the end, six texts were chosen that best represented how the participant made meaning relating to the visual-verbal relationship during the time I worked with him. The child's work was digitally photographed at the end of each session. I took pictures of both the process and product. I did not take any photos that contained any identifying image of Jacob. In fact, he preferred not to be in the photo and assist me in taking pictures. Usually he grabbed the camera, and much like a director, would correct my perspective and check the lighting. Sometimes Jacob would take up to five minutes to get just the right shot(s). Why certain ones did not “look right” he could never explain, he just knew. I noticed that he particularly enjoyed and took extra time taking pictures of 3D objects, such as with his model of the Coliseum with gladiator figurines fighting in the middle.

At the end of each session, Jacob had the opportunity to review the pictures I took and discuss with me which ones I could keep or which ones I should delete. He never hesitated to delete the pictures he felt did not look perfect and he was very open to letting me photograph his various artifacts. At times he looked proud of the fact I wanted to take pictures of his work.
In terms of data collection, I amassed three of Jacob’s actual drawings, a copy of his Roman newspaper, and digital photographs of his work as well as on-line digital copies of his slideshows and his movie theater trailers which his mother shared with me through the computer program, Dropbox. As stated before, he was quite willing to share his work and was keenly interested in my using both the audio recording device and digital camera to document his meaning-making. Jacob was especially excited to use the digital camera I gave him for the duration of the project which was intended for him to take pictures of his own work, both during our sessions and hopefully for work he might create in between our sessions. To make him comfortable, we played around with both devices prior to actually using them. He was very particular, even during this experimental playtime to get it “just right.” When I went to use the audio recorder he always made sure that the recording device was placed in a good spot. Jacob was very keen to listen to it immediately after we used it to hear back our conversation, both for sound control and to review what we discussed. I think he enjoyed hearing himself, for he always smiled and laughed at what he said.

Jacob’s texts were created either on the computer using programs such as iMovie and Word Publisher or by using paper and pencil. Jacob’s fascination for technology was fairly obvious. He could also be quite critical of his work, one sign of his need for perfection (another common trait of children who are gifted, in my experience). For example, he would always point out when features of characters he drew were out of proportion such as a larger head compared to the shoulders, or he would explain that what he pictured perfectly in his head did not match what he was able to put down on paper. Sometimes his grandiose and creative ideas were the reasons why he stalled with his schoolwork, because he was unsure how he could actually create what he envisioned. For example, for one school project where
he had to visually display a story he had written, Jacob had originally wanted to create an ancient looking scroll that the teacher could roll out and read from. However, he could not figure out how to make the scroll and eventually the deadline arrived and he was forced to put his story down on a poster board the teacher provided, which frustrated him because he did not like the chosen poster board and it definitely did not match his original vision. Jacob had clear opinions of what he liked and did not like.

3.9.3 Ethnographic Interviews

Interviews that transpired were informal and ethnographic in nature. Ethnography is a useful approach in the field of language and literacy. Heath and Street (2008) compare being an ethnographer to that of a juggler. Part of their comparison includes how “both call for practice, close observation, and the challenge of having to manage more and more balls in the air. Both involve figuring out and hanging definitions, principles of operation, and motivational incentives. Both are about constant learning” (pp. 2-3). Their clever analogy accurately reflects the complexity of ethnographic research that I experienced. During my research, I referred to Heath and Street's (2008) perspective and discussion of ethnography as they relate it to the field of language and (multimodal) literacies.

Classrooms tend to be a frequent site of study for ethnographers (Heath & Street, 2008) where academic intelligence is the focus. Unfortunately, students with a learning disability have a greater chance to be observed as struggling students in this scenario. The kind of learning children engage in outside of school that nurtures the development of their practical intelligence can be undervalued or not considered (Heath & Street, 2008). By changing the context and observing children in their home setting, it is possible to observe their strengths. Promoting learning and engagement that incorporates both types of
intelligences might be a way to minimize marginalization and motivate a child to engage in
more academic based thinking (Heath & Street, 2008).

Through an ethnographic approach, my aim was to describe events or actions I observed within Jacob's home setting that could enlighten me in terms of how he made meaning and experienced re-transformation in his meaning-making. As part of the research process, ethnographic interviews or perhaps a better coined term in this case would be (informal) ethnographic conversations, were recorded via field notes and/or audio recorder. Generally, conversations took place during the process of meaning-making and then more specific questions were asked regarding the final product afterwards. Typically, a product would be revisited during a follow-up visit after I personally reflected and analyzed it at home. However, this generally did not deliver results as hoped, in terms of offering me further information or deeper-level thinking into the reasons behind his decision making. Questions were answered exactly the same as when I first asked them during the initial session, or not answered at all and given a shoulder shrug in a “been there, done that” sort of way. Arriving at the true meaning behind his texts had to happen in the moment, since also talking about a product at a follow-up session ran the risk of details being changed or dismissed because new ideas or tangents of thought would arise when revisiting a piece of work. As a researcher, then, I must decide the validity of any new thoughts because “transformation” is ongoing.

3.10 Data Analysis

Data analysis was multifaceted, drawing from different theoretical frameworks to analyze the relationship between image and print in Jacob's meaning-making practices and to ultimately address the main research questions of the study. Primarily, Gillian Rose's (2001)
analytical approach to visual methodology was referred to, in addition to Kress’s theory of multimodality (1997, 2000a) when interpreting Jacob's texts. In my analysis I present six of Jacob's texts.

Taking a multifaceted approach makes it possible to see how Jacob's preferred mode of visuals helps (a) promote a greater degree of agency and allow him to confidently explore and construct his identity as a learner; (b) make it easier for Jacob to prove the extent of his expertise knowledge versus through print alone; (c) demonstrate how technology is a key part in his meaning-making and is highly motivating in terms of bridging the gap between traditional and new literacies. Above all else, allowing him to play and experiment with visuals in his literacy practices helps him become active in the processes of writing and composing texts as opposed to passively getting by and reaching the bare minimum of expectations.

3.10.1 Context

All of the sessions took place in the home context. In this study, I was a very active participant, in that I was interacting with the subject during each session. Although other family members were around and there were frequent interactions between Jacob and his family, it was generally just Jacob and I in an almost tutor-like context. It was clear I was there to help him and so there was little interruption in order that we could be focused on the task at hand. Due to the close proximity and the constant interaction I had with Jacob, he became acutely aware of when I would write a quick note down in my journal or he would become easily distracted if I reached for my audio recorder. To reduce distraction as much as possible I took time immediately after each session to elaborate on my shorthand notes and jot down what had transpired in as much detail as possible. Later that day I would then
My analysis began with looking over my field notes and transcriptions of the sessions. As mentioned above, my field notes consisted of my observations of the participant during our sessions while engaged in text-making, the mood of the household, any key interactions between family members that occurred, conversation that happened between myself and the family members, my reflections immediately after the session, and any subsequent follow-up questions that came to mind for the following visit. The digital photographs taken of Jacob's work were constantly reviewed and read several times over throughout the data collection process to find patterns, commonalities, and idiosyncrasies.

### 3.10.2 Rose’s Methodological Tools

Throughout the data collection and the analysis, I referred to Rose's (2001) theory that visuals are culturally meaningful and the interpretation of an image can occur at three sites of meaning: the site of production, the site of image, and the site of audience. When analyzing Jacob’s visuals, I looked at how they were made (production); what they looked like (image); and how I viewed them or how others may view them (audience). For each of the above processes there are three aspects, known as modalities that also play a part in understanding visuals: technological, which focuses on the tools needed to create, structure, and display an image; compositional, which looks at the actual visual elements that make up the image and how it is received; and social, which looks at the social practices, as well as the economic, political, and institutional influential factors that affect the interpretation of an image.

I also referred to Rose’s questions (2001) which were most relevant to my research purposes, as guidance in terms of what to look for, how to think about the images, and how to
sort and organize my visual data into themes. Some of the key questions were the following (Rose, 2001, pp. 188-190):

Questions to think about the production

- What technologies does its production depend on?
- What were the social identities of the maker, the owner and the subject of the image?
- Does the form of the image reconstitute those identities and relations?

Questions to think about the images

- What is being shown? What are the components of the image? How are they arranged?
- Where is the viewer’s eye drawn to the image, and why?
- How has its technology affected the text?

Questions to think about audiencing

- Who were the original audience(s) for this image?
- Have the technologies of circulation and display affected the audiences’ interpretation of this image?
- Is more than one interpretation of the image possible?

The goal of using these questions in my analysis was to essentially answer, “How does Jacob make meaning?” I separated the texts I witnessed and collected into one of two categories: expository texts and personal interest texts.

Analyzing images was a greater challenge than I initially perceived. I found one of my greatest struggles was with knowing how to appropriately address, respect, and represent the complexity, including the subtleties, of the visuals within Jacob’s texts. I also had to
constantly monitor my personal biases. Many critique that visual data are much different than verbal (written or spoken) and therefore begs the question, is it appropriate to apply a critical, analytical framework on visuals that is primarily used for analyzing language-based data? I agree with Rose (2001), that language-focused methodologies typically used, such as semiology or discourse analysis, may not get to the heart of images, and, as some have suggested, a mixed method or hybrid approach is perhaps the best method for interpreting visuals (Kendrick & Roswell, in press; Rose, 2001; Siegel & Panofsky, 2009).

3.11 Ethics

Ethical review was approved by the University of British Columbia's clinical Research Ethics Board (REB) prior to beginning data collection. Written consent and assent forms were provided to the family to kindly ask for their permission to participate in my research study. Both the consent and assent forms outlined the study's purpose and methods for the participants. The forms also informed them of their rights in the study, including their right to withdraw at any time without any penalty or consequence. Finally, it was stated that their confidentiality and anonymity would be respected through the use of pseudonyms, and by documenting only the artifacts in digital photographs and not the child, and by modifying any personal information so it would not be easily identifiable.
Chapter 4: Jacob’s Multimodal Texts

In this chapter I present six of Jacob’s multimodal texts which are telling examples of how he made meaning during the time I worked with him. They are arranged chronologically according to when I observed them during the data collection process and they are titled as follows: Roman Children Slideshow; Roman Children Poster Board; Journal; The Londineum Sun; Birthday Card; and Snowboard Kid. Coincidentally, the first three texts come across as more formal and expository in nature; for example, the first two were created to fulfill a requirement and meet a deadline for an exhibition, run by the Vancouver School Board. The last three were created purely for the participant’s own interest and at his own pace. Due to my research interest in understanding a child’s struggle with writing, I feel my examples provided me with a variety of texts that allowed me to observe both his frustration and creative ways of handling print and the visual and verbal modes of communication.

My analysis of each text is presented under headings in relation to the sites of production, image, and audience, while touching upon the modalities when they interrelate. I also highlight additional points of interest for each of the texts as a way of further explaining the visual-verbal relationship in Jacob’s text-making. My analysis draws on data from observations, interviews, and artifacts.

4.1 Text #1: Roman Children Slideshow

4.1.1 Context

A few weeks after my introductory visit with the family, I had my first official session with Jacob. It was in the early afternoon and he had just returned from a baseball game where his team had won, putting him in good spirits. His happiness carried over into our visit as he interacted with me and led me to the computer to continue working on his slideshow. The
slideshow titled, “Roman Children,” was created at home over a period of a few weeks with the intent that it be part of his ongoing research project for his mentorship program (run by the Vancouver School Board for children who are gifted). His goal was to illustrate the life of ancient Roman children. He enjoyed this program because it allowed him to work with a mentor and deepen his background knowledge of Ancient Rome. The slideshow was created under his own criteria for an exhibition and he was in control of how he wished to display information and what information he wished to present to the audience. Jacob was interested in continuing to work on the visual component of his slideshow when I visited, but his mother hoped that I could encourage him to add either a voice-over narrative or written text to support his pictures. Upon hearing this suggestion I could sense a faint hint of resistance in his voice when he verbally agreed to it. He said he would wait until the very end to add verbal information once his show was complete.

4.1.2 Site of Production

Creating his slideshow at home, the technology used was the computer and iMovie, which is a program Jacob is very comfortable with and uses often for his personal multimodal texts. His choice of modality for production gave him the spatial freedom he likes to have; the affordances of composing on-screen meant he could holistically and objectively view his entire text as it was being created (Burnett & Myers, 2006). He composed with ease and speed. Jacob copied and pasted a total of twelve pictures from Google Images for his slides. Each time a new slide was added Jacob reviewed it several times for how many seconds it was on screen, how it coincided with the music, and how it worked with the transition features. He was focused and was very opinionated with what worked and what did not. His slideshow was just over two minutes in duration (Figure 4.1).
Afterwards, Jacob chose to supplement his slides with an ad-lib style narration as opposed to a written text because he strongly declared that he “vow[ed] never to write.” This even included jotting down and organizing his ideas into a rough outline of what he wished to say prior to recording it. It is my opinion his refusal, or perhaps his act of rebellion (Kendrick & McKay, 2004) to write, was in reference to school texts where it was a requirement (as it seemed a requirement to him in this case). Also, I had seen samples of writing in his personal journal and other texts that he had created for his own interest (e.g., The Londineum Sun included in this analysis), which indicated to me he did not completely refuse print and he did see a need when he felt it was appropriate.

During the process of narrating, Jacob seemed more concerned that the voice-over “fit” his images rather than vice versa. In other words, what he said was not as important as the pictures. He would narrate as he watched a slide and if it looked like he would speak longer than the time slot of that particular slide, then he would cut himself short, as opposed to lengthening the duration of the slide itself. Frequently he made the comment that he did not want to speak for too long because he felt it was unnecessary. I believe he felt this was the easier route to take because he was keen to move on. It is unknown whether this was because his mind was jumping ahead with information for the next slide or whether he did not, again, want to go back and re-edit his work and have me suggest to him to stop and expand his ideas. Referring back to the discrepancy between his (weaker) working memory (63rd percentile) and his strong perceptual reasoning (91st percentile) and language skills, it is quite possible he felt he had to rush to get his thoughts down before he forgot them, as he could not hold on to them and simultaneously start retrieving additional information for the next slide which would come up quite quickly during the recording process. This is also a
good example of what could potentially occur with his school work; the end product, while it is still a great project, might not fully reflect his intellect and wealth of knowledge.

4.1.3 Site of Image

The compositionality of an image is sometimes made in relation to the genre of the image which in this case could be defined as the genre of information text. The interplay of all three modalities in this text (technological, compositional, and social) invites us to visually understand the life of ancient Roman children (as seen through the author’s eyes). Through the medium of a slideshow Jacob created movement with his static images, again displaying his preference for dynamistic qualities. The slides included images of amulets, statues of Roman children, digital-sketched pictures of ancient writing and school materials, and what looks to be African classroom of children. The “ancient” theme ran through all of the images except the one of the classroom of African children which I was confused by. When I asked why that slide was included, Jacob’s answer was that it was to show that both
modern and ancient Roman children had to go to school. When I asked why he chose a picture of an African classroom he said it showed children from today; when I asked if this slide might be misplaced as it was the only picture representing something from modern day he did not agree with me. At the same time, he might have also been resistant to go back and edit his work. In my experience, for children who have a hard time with organization and output, once they feel their work is complete, they experience what I would describe as a cognitive overload reaction when it comes to editing and revising. The mere notion to have to go back into their work and sort through it, reflect on it, and change it is stressful.

4.1.4 Site of Audience

Jacob created the slideshow knowing it would be viewed by a public audience at the final exhibition at a local school. The show was similar to a Science Fair exhibition and the audience included peers, parents, mentors, teachers, and the general public. This was one reason, I feel, why he felt he needed (and did not outright resist) to have a narrative or voice-over. He understood the genre of an exhibition, which includes both visual and verbal components. He was also very much aware of academic expectations. Thus, in terms of both the compositionality and social modality the slideshow was influenced by and created to display formal, expository, and research-based information.

From my observation of his talk and actions during the process, it seemed that Jacob had a clear idea of the layout of his text. By using the mode of a slideshow he was in control of how the audience viewed the text. He controlled the order of the images and for how long the audience viewed each one. With the voice-over he also decided which information was most salient and what detail(s) he would be emphasizing from the picture. From my perspective as a viewer, it was easy to see he had a clear understanding of the genre of an
exhibition both in its production and purpose. He also incorporated both traditional and
contemporary methods to display information by using both a poster board and a laptop at
the actual show. With his understanding of the affordances of the technologies he chose and
his understanding of the compositionality, he was able to effectively project his identity as
that of an “expert” in all that pertains to Ancient Rome.

4.1.5 Additional Points of Interest

Jacob was quite captivated by and preferred to spend his time looking for images on
the Internet as opposed to thinking of what he would say (the verbal content). He frequently
lost track of time as he became engaged in exploring and embellishing his visuals with all the
bells and whistles of iMovie. For example, he methodically went through all the possible
transitions, asking my opinion to try to figure out which one worked best. He seemed to be
preoccupied with these finer details so that his show “looks and sounds good,” as opposed to
reflecting on whether his images were sequenced in a particular, coherent order, or on what
he would add text-wise (print or oral). In fact, the process of organization for the sequence of
his images, the accompanying text, or how to go about editing his work was a challenge for
Jacob. To him, this required too much time and it seemed overwhelming for him.

When I asked Jacob why he chose the images that he did, he said that he just chose
pictures by random (“random” was frequently a word he used when answering my questions,
almost as a way to avoid getting into greater detail behind his decision making). There was
one instance where he sang out, “Eenie meenie mini mo” to pick a picture. For the most part,
I observed that he would go to Google Images, type in a word such as “amulet” and would
pick the first image that piqued his curiosity and “looked good” (e.g., if it looked like
something from Ancient Rome and if it had a quality he was looking for). For example, he
wanted to look for an amulet that was shiny and after finding a picture of a large, shiny one, we entered into a bit of a discussion as I encouraged him to validate his picture choice. When I asked Jacob if the picture he chose for his amulet was in fact an ancient Roman one, he said it looked like it was. Upon reading the caption below the picture, we discovered it was Celtic. With further encouragement, and with me taking control of the computer mouse, we did some quick research and discovered some pictures of genuine ancient Roman amulets. We also discovered that males and females received different ones. This then lead to the discussion and question of which type of amulet did he wish to include in his slideshow and why? A similar episode happened when thinking of what to say about the educational tools ancient Roman children used. Looking at the picture he assumed they used “paper or papryus.” With further research he was completely fascinated to discover that paper could also be created from shaved cow and pig skin. This immediately shifted his focus for his voice-over and which details he would emphasize, and led him to be curious about other features of ancient Roman school life. Jacob extended his thinking in this case and learned there was more than he assumed; it was very surprising to him that paper could be made using non-typical paper materials like pig skin. I had hoped this would have persuaded him to independently research additional information for the remaining slides, but this did not happen.

4.2 Text#2: Roman Children Poster Board

4.2.1 Context

Jacob’s poster board was another component of his research project. On it was a Venn diagram comparing modern and ancient Roman children. Using different technologies, it also presents as belonging to the genre of information text and due to the choice of materials, it
looks more like a traditional school-based text than the previous example. Jacob composed this text with initial guidance and support from his mentor. Unfortunately, I was not there throughout the entire process and so I had him explain to me how he went about creating it at the beginning. The reason for including this text in my analysis is because it correlates to the slideshow and gave me a sense of how he tackled more traditional (school) ways of representing information. I was interested to see how he would try to incorporate his preference for pictures with verbal information in his meaning-making when formal expectations were the criteria. More specifically, I wanted to see if his choice of technology affected the production of his text. For instance, this text used traditional pen and paper and had no digital elements and I was curious to see if his decision-making was different in terms of how he decided to use his visuals because of this. Was the balance between written text and images different? Did he make continual (re) transformations as he progressed, similar to when he was working on-screen?

4.2.2 Site of Production and Image

The poster board was created at home and during one of our sessions, I observed Jacob at the end of the process as he reviewed his work and finished the fine details. The “image” consisted of a large yellow piece of poster board with a large hand-drawn Venn diagram on it. With coloured markers he wrote down comparisons between ancient Roman children and modern day children. Surrounding the Venn diagram were placed coloured photographs that he had personally taken himself to also show differences and similarities.

When asked about the process of the picture taking, Jacob recounted to me how he and his mentor, using a digital camera, walked down a fairly popular street not too far from where he lived that was full of cafes, antique stores, thrift shops, produce shops, clothing, and
toy stores. He said he took pictures of whatever interested him and if it looked like it could be something the ancient Roman or modern children would use or have. He quickly added that he liked things that had colour, making a gesture towards pictures on his poster board like the one of various barrels of colourful toys outside a storefront, one of multicoloured arrangements of produce, and a mini palette of paint.

When I asked him how he organized his pictures or how he decided where to place them on the poster board Jacob said he had no clear method or reason except for what “looked right” and that he tried to put what was modern near the “modern side” of the diagram and what could be considered ancient near the “ancient side.” Jacob relied heavily on how things visually looked to him and for some reason he was unsure how to verbalize his rationale behind why things looked wrong or right. Regarding my query about the constraints of the technological choice(s) for this text on production, he did not have the same ease with his (re) transformations when reviewing and revising his work. Once his pictures were glued down they were “fixed” on his poster board so any new ideas or adjustments to the ways of presenting the material could not be easily addressed compared to if he had used the computer. Using the computer allowed Jacob to change his mind, make last minute decisions, and rearrange his elements. Hence, even though he verbally mentioned he would have placed a certain picture in a different spot if he could go back, he felt this was not possible and would ruin his work or that he would have to start all over again. In terms of the balance between images and words, I would say it was fairly equal, including the use of colour seen in both his photographs and his written text (Figure 4.2).
Initially, it seemed what he wrote within the Venn diagram did not match the pictures he used except for the words candle and sailboats. Other photographs included items such as: vegetable produce, toys, paint, jars of honey, scrolls with swords on them, a statue, and marbles. The items he listed in the diagram included: computer, DS, light bulbs, Xbox, chariots, urine wash, graffiti, and gladiators. It was from my discussion with Jacob that I could begin to see his train of thought. For example, he explained his pictures of bananas, honey, and produce all represented “lunch” and the wooden pull toy, the marbles, and spinning tops all represented “toys.”

4.2.3 Site of Audience

Like the slideshow, the poster board was created knowing it would be for an exhibition show to be viewed by an audience of teachers, mentors, peers, friends, and family and so it was influenced by school-type expectations. After all, the program is run by the
Vancouver School Board and the final exhibition show is hosted at a school. In terms of social modality, he took on the role of expert and was in control of the presentation, determining what information was most significant to display. Traces of his social and cultural identities are present in this text through his choices of words in the Venn diagram and his choices of pictures he displayed. For example, the words: Xbox, car, and hockey all describe typical activities he would engage in, whether by himself or with friends on a regular basis. Also, the fact he took pictures from his local neighbourhood alone, such as the baskets of toys, or pictures of vegetables from a local produce store, reflects traces of his cultural identity.

4.2.4 Additional Points of Interest

A part of this text that he was particularly proud of was his addition on the back of the poster board, which was his idea and which I did not expect. It signifies how strongly he feels about marking his identity on his creations. On the back he wrote a “review” by the supposed New York Times and a tiny paragraph about himself as the “author” that was to mimic, according to Jacob, what one might find on the back of a book. “I am thirty years old. I started writing eight years ago. I have won eight Nobel prizes” (Figure 4.3)
This shows his great sense of humour, creativity, and the fact he likes to go beyond the expected. It could also be argued as another example of identity exploration and a projection of himself into imagined communities (Kanno & Norton, 2003; Peirce, 1995). In this instance, he identifies with and imagines himself as a world famous author, being recognized for his great stories and even having won awards for his talent or ingenuity. It is interesting he portrays himself, and through the act of writing itself, as a great author even though he vows never to write. He could have alternatively chosen to describe himself as an archaeologist or famous anthropologist, considering his interests.

4.3 Text #3: Journal

4.3.1 Context

In order for me to understand how Jacob dealt with writing, his mother suggested that I do a writing activity with him and maybe use it as a (school) journal entry. It had been a
while since he had done one and his classroom teacher expected that he regularly do so. Jacob agreed to this and he was generally willing and compliant, but at the same time his resistance to the idea was also obvious. When I asked to see his school journal, it was one of the few things he did not immediately jump up to get. He simply pointed in a direction, and from a pile of stuff I retrieved his school journal which immediately exposed how little he valued it, with its torn and crumpled edges, its missing front cover, and general overall messiness. This session allowed me to gain a good understanding of how Jacob approached writing tasks and his frustration with them. Naturally, when asked what he wished to write about, he shrugged his shoulders and said “nothing.” I took this opportunity to see if I could try some strategies (e.g., using graphic organizers, storyboards, sketches, etc.) that involved using drawing or visual information as a tool to help ease him into writing a story. I was hoping this could enlighten me with where he was frustrated and why.

4.3.2 Site of Production

This text was created at Jacob’s home, in the living room, with me by his side on the area rug. The idea was to have him write a story, using a topic of personal interest to help motivate him. Having a child write about what she or he knows is touted in the research as being one way to help a struggling writer (Vygotsky, 2004). To help bring about inspiration, I suggested that Jacob go search for his Roman 3D models and his plastic mini figurines. Based on what I had observed up to that point, it seemed that he was more attracted to 3D and action. He immediately found the items and went about setting up a Gladiator battle scene, with two figurines placed in the middle. As Jacob talked out some story possibilities, I wrote down his main ideas. His storyline turned out to be a fight between two men that he referred to as a retired gladiator and a regular gladiator. He used the movie “Gladiator” as his
inspiration, although he had a hard time using it only as a springboard and taking the opportunity to delve into his own ideas. He felt his story had to be factually true compared to the movie.

In the end, when it came time for Jacob to condense and structure his thoughts into an actual narrative, it was quite short and essentially described the one scene he portrayed with his materials. Considering the neurological demands for writing, to constantly generate ideas can be difficult for children who struggle with output. Usually in the classroom teachers only have children draw out one picture (and even then at the end of the story after they have done their “work”) and in my experience and as I observed in this study, it is hard for some to write beyond what they have displayed in their one image. Even with coaxing and further discussion about the story, Jacob said he could not think of another scene to draw. He backed his reasoning up with the explanation that the battle was the most important part of the story. Unfortunately, what he verbally offered me as he drew was not reflected in either his image or written story. This obviously could have impacts on him in school. It also shows how his choice of technology can constrain his production and composing; had we used visuals and the Internet I am sure he would have created a much more creative remixed or hybrid text for his narrative.

4.3.3 Site of Image(s)

His image, both pictorially and using 3D objects, was a single scene of a bloody battle. Based on a prior conversation over another text, Jacob stated that to have meaning, it should have action and this is what both versions demonstrated. The image(s) showed the main gladiator “Marcus” lying on the ground, hurt (Figure 4.4). In his drawing, it was interesting that he chose to draw his battle scene on a double page spread, and using double
page spreads was noticed frequently in his personal journal when I glanced through it during our other sessions (Figure 4.5).

![Figure 4.4: Battle scene from his narrative](image)

![Figure 4.5: Another example of his drawings from his personal journal](image)

Interestingly, his drawing had little to no detail in the background, causing the viewer’s eye to become drawn to the two characters. Referring to Kress and van Leeuwen’s (1996) description of salience in images, it is possible to see how Jacob finds action to be the most meaningful in his pictures. In this example, the most salient information is in the foreground with the drawing of the two gladiators. Using two pages he devotes one page to each character, both of which take up a significant amount of space on the paper, indicating
they are equally important; yet, it appears the “winner” has slightly more detail as shown by the squiggles around his body and a few extra details on his armour. Looking at how Jacob framed his battle scene, the action pretty much takes place in the middle of the book where the two pages join at the spine. Although, again, the winning gladiator seems to hold a bit more importance as one can see his arm stretching onto the other page. Having the battle happen in the middle of the page spread plays an important role, as this is where they eye is drawn to when looking at the overall image and it also creates a connection between the two pages by bringing the characters together.

In addition, another version he created of this scene was with my camera. When it came time for me to document his work Jacob quickly took my camera, stood behind my shoulder and stated that he should take the picture because it was his work and he had to figure out the right angle and lighting. He took a good five minutes to capture a satisfying picture. He needed to make sure that it was apparent who had won the battle. He found it challenging to document a 3D visual, but he seemed very interested in playing around with the camera and trying to figure it out.

Figure 4.6: Jacob’s camera shot of his 3D gladiator scene
4.3.4 Site of Audience

According to Jacob, he wrote this entry with no particular audience in mind. However, because his mom suggested it could be used for his school journal, and with him seeing me in a teacher-tutor type role, he treated the writing portion as he would regular school work. He did not find the writing portion of this activity meaningful, which came across when it was clear he was not about to push himself in terms of elaborating on his ideas and when he told me after the two sentences that he was done and it was “good enough.”

4.3.5 Additional Points of Interest

When asked to write a story based on what we had already discussed and drawn, Jacob almost seemed excited because I had suggested he could type it out on the laptop computer. He immediately grabbed the laptop and hooked it up to the TV. He was not interested in brainstorming and wanted to write right away. He seemed keen to start putting stuff immediately on the screen and so he began with his title, which was “Person” to begin with because he could not think of anything else. It was also an easy word to spell and the first one that came to his head. He then took fifteen minutes playing around with fonts, margins, colour, etc. The term “Obsessive Compulsive Font Disorder” (Matthewman & Triggs, 2004) came to mind, which is in reference to the way children seem to get caught up in, what many find meaningless, the “presentational features” such as font size and colour as opposed to the actual writing. I had to remind myself to push my teaching instincts aside which wanted him to produce and not “play,” so I had to not interrupt. I was curious to observe what Jacob would do and for how long and to figure out what these actions meant for him in his meaning-making. When it came to the first sentence it took ten minutes. In the end, and even with me offering to type the second sentence as he spoke, we only managed
two sentences of his story. He was done after that, had lost focus, and wanted to move on. In a way, to go from verbal discussion, to playing with his 3D material, to drawing, back to verbal discussion, and then to typing was a long process and Jacob had lost interest by the time we got to the hardest part at the end.

This session was enlightening because it demonstrated, I believe, that while he may show resistance to school-based literacies, Jacob still hopes and wishes he could be a fluent writer. Many times when we would go to write (if he was excited about the task) there was initial willingness, but it was almost like he was being reminded each time that it was challenging because as soon as he had a pencil in hand or a keyboard under his fingers he hesitated and his shoulders slumped. It is impossible to say how Jacob’s brain organizes information and what exactly happens that leads to frustration with his written output, and which is beyond this research study. Regardless, I saw the desire was there for him to write, as were the ideas. Knowing how to effectively use his drawings or other modes to transfer his ideas into writing remains challenging and is where scaffolding needs to take place. For example, what is an effective way to help children transfer what they have in their drawings into writing, beyond merely describing what they see? During another session, Jacob and I had quite a lively conversation about healthy foods and he drew a quick image to compare meat and vegetables but in the end, when asked to turn it into a paragraph, he just looked at his drawing (which he had enjoyed doing) and was truly stuck. Unfortunately, even if I had figured out appropriate ways to work with him on this, my visits were not intensive or frequent enough to allow for proper scaffolding. To change habits and ways of thinking and to properly scaffold takes more than a visit once a week over a period of a few months.
4.4 Text #4: The Londineum Sun

4.4.1 Context

This text was created out of personal interest and is intended to represent an ancient Roman newspaper, which Jacob named The Londineum Sun. Jacob and his father created the first edition which he gave to me on my initial visit. The text discussed here is the second edition and Jacob composed parts of it over two of our sessions (Figure 4.7). During these sessions, I was able to observe him in action completely on his own. He did not ask for my input, however, he wanted to see my reaction to the final product. I observed an invested boy engaged in his meaning-making, who felt free to be creative and funny. I feel this text represents a strong example of how he makes meaning if left to his own devices, which can involve hybrid literacy, mixing traditional with contemporary modes of writing. The Londineum Sun also demonstrates how he will use print when there is a clear purpose.

4.4.2 Site of Production

Jacob created The Londineum Sun on the computer at home and while watching him I was able to again witness how he composes in a non-linear fashion, which is reminiscent of Burnett’s and Myers’ (2006) and Ranker’s (2006) observations during their studies, as discussed in the literature review. As noticed with the production of his slideshow, using the computer program Microsoft Publisher and the Internet allowed Jacob to easily and continually jump between the verbal and visual elements, as he saw fit. In regards to the process of Design, this example exemplifies the definition of what it means to be a literate learner of the 21st century. In the era of Multiliteracies (Cope & Kalantzis, 2000; New London Group, 1996), which encompasses multimodality, multimedia, and new digital technologies, texts are complex and multifaceted (Kress, 2000a, 2003). This text was a
complex fusion between traditional and contemporary ways of composing and also effectively demonstrates new ways students are exploring their creative possibilities with writing nowadays (Edwards-Groves, 2011, 2012).

Like Burnett and Myers’ study (2006), the visual design of the text took up most of Jacob’s time, with the framing being the first step. Once he chose his template he spent several minutes simply looking and scrolling up and down the pages, examining the layout. There were several quiet “hmm's” as he went about this process. Another chunk of time was spent on playing with the font. He would type out a tentative title, look for an ancient-looking font that struck his interest, only to quickly highlight it and change it to other possible fonts that might look even better. Then he would change the size and the colour. He always wanted a very large sized font, usually trying the largest one first. Once he found a font he liked, he began to shift the margins of the boxes on the screen ever so slightly to see what they might look like if they were bigger or smaller. He appeared to enjoy this exploration.
Figure 4.7: Jacob's Londineum Newspaper
For Jacob, this experimentation warmed up his brain, so to speak (Burnett & Myers, 2006). When I asked him what he was thinking as he went through his decision making, he said, “Nothing really.” He mentioned it was similar to what he does in class prior to writing where he likes to draw first, and it is when he doodles or draws that he knows his brain can begin to figure stuff out, including what he wants to write about. Jacob said it does not work for him to suddenly begin writing like it does for other people. As he explained this to me, I did not feel a sense of low self-esteem or hopelessness, rather there was still a confidence which is most likely linked to his identity at being good with drawing and art. He was proud of the fact that he could draw out his ideas in a different way.

4.4.3 Site of Image

In order to structure his text Jacob chose a template from Microsoft Publisher which he felt resembled a newspaper the most. His influence in this case was his local newspaper, The Vancouver Sun, which is reflected in his choice of title. He liked the fact the template organized the screen into different boxes that he could fill in. The Londineum Sun is a perfect example of a hybrid text because it joins traditional and modern ways of writing. In the original version there are paragraphs and texts of information that he wrote himself as well as other bits and pieces that he copied and pasted from other multimedia texts on the Internet. Traces of his identities are obvious, whether they relate to his identity of being an expert on Ancient Rome, being witty, or being good with technology. In all his sections, he creatively mixes in true factual knowledge with humour, even if only very subtly such as with his joke, “How many Roman soldiers does it take to change a light bulb? None, there are not light bulbs in Ancient Rome.” Finally, he overtly asserts this as his creation, in the lower left corner of the last page where he writes his name as the editor.
4.4.4 Site of Audience

This newspaper was created primarily for Jacob and his family, but also for anyone who was willing to read it. Jacob was very proud of his newspaper and I would venture to say equally proud that it was originally a creation started between his father and him. These family literacy practices, which involve co-collaboration and joint inquiry, are a valuable resource in understanding Jacob’s social and cultural identities (Pahl & Rowsell, 2009), traces of which are sedimented within this newspaper. Besides the examples already mentioned above, one can see that he identifies with being a standard, eight year old boy with the typical interest in “boy toys,” as shown with his “Ferrari VI” advertisement, and his sections on more action-based excerpts, including a beast killing one of Caesar’s men.

Evidence of him identifying with being a reader is shown with his Book Report section and his review of a book titled, The Amazing Book of Ulysses. Perhaps most importantly is that this text also reflects his identity as a writer (and a columnist writer at that!), which he feels is restricted in the classroom context.

4.4.5 Additional Points of Interest

Initially, as I sat there watching Jacob fiddle around for what seemed like hours with the visual or graphic design features, such as the tool bar, the fonts, and spacing, I felt this session was not going to be as productive or produce the significant data that I was hoping for. This thought was reinforced by Jacob’s mother who walked in the room and, upon seeing Jacob “playing around,” asked him what he was doing and to focus on getting to work. However, similar to my session with him when working on his school journal entry, I realized what I was observing was in fact very representative of how Jacob made meaning. I was witnessing the non-traditional and non-linear qualities of his meaning-making. His rapid
succession of checks and changes of details were not an avoidance of the “real” creation or writing of the text, but confirmation or realization of the multimodal possibilities that the technology before him was allowing. If he wanted to write a small paragraph of information he realized he could make a box smaller. He was also symbolic with colour, such as for his weather report when he made the background behind a sun icon blue to represent the sky.

This is an interesting text for another reason because upon looking at the final product, one can see how it resembles a newspaper, with a fair balance between the use of word and image. Looking at the size and placement of both written text and pictures Jacob appears to treat them as being equally significant in their role of portraying meaning. Many people would probably be quite surprised that it was created by a child who supposedly does not care for writing and who has been diagnosed with a writing disability. This only emphasizes the need to consider literacy practices that happen outside of school, especially in the home context. There are indeed “hidden literacies” of students who do not flourish with the traditional teaching model that, if discovered and unlocked, could be capitalized upon (Rowsell & Kendrick, in press).

Jacob’s very rich background knowledge comes through when reading his excerpts. He also shows talent for creative writing. In some ways his ideas and use of comedic style in his writing is advanced for his age, in my opinion. For example, one only needs to read his paragraph on “Marc Anthony the Hippo Whisperer” to see how he is able to effectively mix facts with humour (Figure 4.8). In contrast to when he had to write for his journal entry, this presents an example of him being invested in his learning and where writing had a purpose and where affordances of print and image were realized in his meaning-making.
4.5 Text #5: Birthday Card

4.5.1 Context

Near the end of one session, Jacob’s mother quickly reminded him that she was still waiting for him to make a birthday card for his friend (whose party they were to attend after we finished our session). The party was to be held at a local community centre pool which was his inspiration for the card. He had a clear vision for his creation and intended to make it personal.

4.5.2 Site of Production and Image

Jacob quickly jumped up over to the chest in the living room where his mother had markers, papers, and other art materials at his disposal. He had an elaborate idea for the card and, once again, went beyond the expected. Instead of folding a piece of paper in two and creating the typical, rectangular 2D card he immediately grabbed the scissors and cut each corner of a blue piece of paper, creating a 2 centimeter fold on each side and then taping them together to create a 3D card that was to resemble a pool. Next, Jacob grabbed a dark
blue marker and drew waves on the bottom of the pool and taped tiny little cutouts from a pamphlet of Lego looking figures to represent the friends swimming in the pool (Figure 4.9). The choice for the figures represented the common interest he and his friends had in building with Lego.

Figure 4.9: The birthday card

4.5.3 Site of Audience

This card was socially influenced because it was created for his friend and because of this he included items that had significance and meaning to their social group. Jacob was very symbolic in his thinking; there were aspects reflecting the social communities that he and his friends participated in which determined the content and format of the card. Even his use of “B-day” is significant as it reflects the casual discourse children tend to use and which is often seen, along with other abbreviations of words, in their texting on their cell phones and in emails. When something is meaningful to him, even if it is a simple birthday card, there is deep thought behind his decisions.
4.6 Text #6: Snowboard Kid

4.6.1 Context

One Sunday morning, during my last follow-up session, I found Jacob engrossed in a personal project. The house was quiet with only he and his father there. Jacob sat at the family computer in the dining room grinning, eager to show me what he was beginning to work on while his father quietly read in the adjoining room. Often, if he has free time at home, Jacob will go to the computer and create “shows.” On this particular day he decided to play around with iMovie. His mom explained he enjoys putting together videos and going through the editing process and this is what I observed that Sunday morning. Jacob simultaneously created two multimodal texts during this visit: “Snow” and “Snowboard Kid.”

4.6.2 Site of Production and Image

Using iMovie, a computer program, Jacob enthusiastically created two Hollywood-style movie trailers. The inspiration for this undertaking came about from an earlier conversation he had with his father, regarding what to do with the numerous video clips of Jacob snowboarding that were on his father’s iPhone. They thought it would be fun to make something out of them and Jacob eventually decided on a movie trailer. Jacob was very focused throughout the entire creative process, starting from when he chose from a wide variety of available templates (reflecting different genres of movies). He diligently went through each of the designs and closely examined the images and listened to the accompanying soundtracks, initially settling on the genre of adventure. He was immediately taken in by the dramatic sounding music; he compared it to something he might hear in a Gladiator movie just prior to a battle scene. He also said it sounded just like “real movie
commercials.” However, Jacob also enjoyed playing around with the other templates and remarked how the soundtracks could create an entirely different type of movie, and thus this is how he ended up creating a second movie trailer which, after discussion, we decided seemed to reflect the genre of a drama or suspense movie.

Jacob took the video clips of him snowboarding and transferred them from his dad’s iPhone onto the computer and into iMovie. Watching him, it was obvious he was completely engaged and motivated in this task. He was equally excited with the composing component of the text as he was with the idea of eventually seeing the end product. It was clear he felt competent with using technology and this session provided another glimpse into what it means to be a learner of the 21st century (Cope & Kalantzis, 2000; Jewitt, 2005; Kress, 2000a).

The texts are built on moving images and each trailer lasts a total of 1:08 seconds (Figure 4.10). In each case it is the dramatic music that initially captures the viewer’s attention, as the caption “Universe Films” rolls across the screen. The trailers not only sound, but also look, professional and are complete with quotes, golden globe awards, and credits flashing across the screen at various points throughout the trailer. Both the content and plots of his stories and his decision to compose these texts as movies using moving images reflects Jacob’s passion for action and his understanding of the genre of movie trailers. Through these texts he also projects his identity as being a good snowboarder and part of the snowboarding community. Although this paper is unable to provide audio, to better understand the visual and linguistic components of the text and to see how Jacob tried to build suspense, still images from each movie trailer were compiled and are presented below. The movie trailers are situated side by side, for sake of comparison.
Figure 4.10: Movie trailers, "Snowboard Kid" and "Snow"
4.6.3 Site of Audience

The intended audience for his movie trailers included his friends, family, and “basically anyone who likes movies.” His goal was to create a realistic movie trailer and then share it with others. His desire to show it to anyone who was interested proved how proud he was of his work. More so than the other examples in this analysis, Snow and Snowboard Kid are perfect examples of what lies behind an identity text because they were a multimodal expression of himself, where he put himself in a positive light (Bernhard et al., 2006; Cummins et al., no date). Jacob chose the topic and he decided how to compose it. He put himself into it as the main and only character, and he reflected his strengths while doing so. It should not be surprising he used computers and technology for the production and composing. It also provided an opportunity for him to explore identity construction and sense of self within imagined communities. On one level he was a movie producer and on another, the main hero or actor in a movie, and finally, a great snowboarder. Putting himself into the movie trailer could also be considered as a way to mark ownership on his text and also shows he was clearly invested in this experience.

4.6.4 Additional Points of Interest

The role of popular culture, in this case Hollywood action movies, was very influential in this text and it reflects Jacob’s strong understanding of the affordances of each mode to the genre of movie trailers. Although these texts are multimodal, most emphasis is on the visual and audio components. Along with the dramatic soundtrack, it is the moving images that form the bulk of the texts and grabs the viewer’s attention, yet Jacob was aware and seemed to understand that the smaller verbal component to his movie trailers was equally important in creating the mood of his texts. For the catch-lines and accompanying quotes that
started to come up on the screen about ten seconds into the trailers he took his time to think about what he wanted to type. He knew that he had to choose his words carefully in order to create the sense of action or suspense of typical movies and what one might see during television commercials and which makes people want to see them.

Jacob had a tendency to rely on the default phrases or quotes found in the original example, tweaking them very little (and in a few cases not at all) because he felt they “already sound[ed] really good.” However, for the little tweaks he made, he took his time and chose his words carefully. For example, with his catch-phrase of “boy versus the elements,” although he ended up keeping the word “elements” which was already in the sample, he did go through various other options out loud: boy versus the wild, boy versus the snowboard, boy versus the cold, and boy versus the snow.

This text is also another example of how Jacob enjoys using computer program interfaces, software, or applications, which provide a visual “design” layout or template for him to fill in. Ranker (2012) refers to these types of textual components as “visual composing resources” and defines them as a specific subset of visual semiotic resources. These visual composing resources, such as the iMovie template, are used as an organizational feature and, in this particular case, the template helped Jacob to design, arrange, and spatially structure the elements of his text to reach a final product. Based upon what the template required (whether verbal or visual) Jacob would do a quick search, import, and insertion of information. As Ranker (2012) discusses, the affordances of certain programs such as the one Jacob used is that they can act as a visual resource that allows students to easily track what is needed and where. If Jacob noticed a blank spot he knew he had to fill it. It also allows the producer to move easily between the composing elements as he or she sees fit and as ideas
form. Indeed, I did observe Jacob moving constantly between the verbal and visual elements as he fine-tuned his meaning. For example, with “Snow,” he knew he wanted to create an action-based movie and that he would be the main actor; however, he was uncertain what the main plot or the overall message would be in his movie. It was only through constant re-transformations of meaning as he moved between the verbal and visual elements, while following the guidance of the template of the computer program, that he came up with the idea of the movie being about him versus nature and, in particular, snow.

A constraint of these types of programs, with their specific design layouts, is that they do influence the composing process (Ranker, 2012). If Jacob found a slightly longer video that he liked, but noticed it had to be a short video of a certain length, he did not mind dismissing the longer video. Or, if he wanted to come up with a longer quote that did not fit into the template, he would either omit it or play around with it to make it fit. Although these seem like frivolous issues, it is important to realize that the template (technology) does affect the composing process and in some cases could potentially shift a meaning-maker’s original intention.
Chapter 5: Discussion of the Findings

From my qualitative data analysis based on my collection of field notes, observations, interviews, and collection of artifacts, I came to understand how playing around with visuals was exceptionally motivating and engaging for a child to compose (multimodal) texts. I also discovered that even though the participant claimed to dislike writing, he would write when he found it meaningful and purposeful. His creative, cohesive, and elaborate hybrid texts showed it may be possible to help a child bridge into traditional methods of writing by scaffolding him or her through different modes of communication rather than always reverting to pen and paper.

The participant, Jacob, is a boy who was in grade three when I began my data collection and the study took place in his home environment. The research question central to the study was: In what ways do visual modes of communication (e.g., drawing, photography, computer-generated texts) help motivate and support a child who has a writing learning disability engage with traditional, print-based texts? The guiding questions to support my main inquiry were:

1. How does a child with a writing learning disability use the interplay of word and image in text construction?
2. In turn, how does the visual mode affect the participant's construction of his identity as a learner?

Six texts were chosen that best represented how the participant made meaning in his text-making. From my analysis of these examples, five overall key themes will be discussed: action and 3D; technology, identity, and agency; technology, organization, and output; image versus word; and the role of “talk.”
5.1 Action and 3D

It was quite apparent from my observations and data analysis that 3D and dynamic representations of meaning were preferred over flat 2D or static images. Jacob had a tendency to draw scenes that involved action, for example, a gladiator battle (there are several double page spreads of gladiators battling each other in his personal journal). He also highly enjoyed creating slideshows from pictures—whether they were from his digital camera, iPhone, or the Internet. This denotes action of another sort; he liked creating movement with his images rather than using static ones that just sat on a page or screen. He also tried to indicate movement in his drawings, for instance, during one of my earlier visits as he was drawing out a quick story for me on a piece of paper, he promptly scribbled over his main character, not because he did not like his drawing but because he was indicating that the character had run away.

Interestingly, when looking at the collection of pictures in his personal journal and the journal entry discussed in my analysis, I found the drawn out scenes had little or no background. Instead the core of the picture was usually the main character(s) or subject of interest, which to him had the most salience (Bezemer & Kress, 2008; Kress & van Leeuwen, 1996) and portrayed action!

His mother commented he liked working with his hands and he could spend hours diligently setting up his Roman figurines or working on his models of ancient Roman architecture, which I observed when he set up his battle scene for our story writing. I also noticed he enjoyed taking over and using my camera to be more hands-on with how to document his work. At one point he said he liked things to look like “real-life” and perhaps 2D was too limiting in this regard and the features of 3D text-making created a truer sense of
reality for him; it has been proposed that working in 3D can allow for different types of meaning to be explored (Kress, 1997; Pahl, 2009).

5.2 Technology, Identity, and Agency

The findings also showed how computer-generated visuals were generally the preferred choice compared to drawing on paper. Sometimes this was because Jacob felt he could not produce by hand what he envisioned in his head. At other times he said it would be much quicker to simply find an image on the Internet as opposed to drawing it out. He stated when we searched for pictures for his Roman Children slideshow that what we could find on the Internet would probably be more colourful, look neater, and would be more fun to do. Jacob’s body language and level of energy would instantly change from disinterested and casual (if he was not invested in the task at hand) to that of enthusiastic and intense focus at the opportunity to play around with a digital device, whether it was the computer, iPhone, or iPad. When asked about the difference between drawing on paper and “drawing” on the computer he simply said computers were more “fun and there [is] more to play with and use.” He was also more apt to try and write independently on-screen compared to on paper (e.g. typing out a journal entry versus using his actual journal).

From my conversations and interviews with both Jacob and his family, Jacob identified with being good with computers and was the “go to guy” in the family if there was ever a problem. Due to this strong identity, using computers gave him a greater sense of agency over his text-making compared to traditional paper and pencil based-texts. In turn, this belief of competency in the domain of technology gave him a sense of self-efficacy, which also influences and is equally influenced by intrinsic motivation (Wigfield, Guthrie, Tonks, & Perencevich, 2004). This confidence is clearly reflected through his identity texts,
as seen in the data analysis. Furthermore, these identity texts which were created within the comfort of his home display his strong literacy abilities, which most likely have not always come through with typical school activities (Pahl & Rowsell, 2009).

5.3 Technology, Organization, and Output

It appeared that using computer programs, like iMovie and Microsoft publisher which have various templates with a specific format was helpful for Jacob. These templates supplied the foundation for his text and visually gave him a clear structure and framing in terms of how much information was needed and where to put visual and verbal material. For example, with his Londineum newspaper, using Microsoft publisher, Jacob liked knowing how many “boxes” of information he had to fill in; the layout visually provided a finite amount of space to use to create a final product. It also allowed him to jump between the boxes and fill them in as he saw fit, rather than being stuck moving in a linear progression as with writing a paragraph of information. Although it was also observed these templates could sometimes be constraining for Jacob, such as when he worked on his slideshow and if he noticed his oral narrative would not fit the template he omitted details, overall they worked to his advantage and he felt comfortable using them. For example, if he was stuck on a thought, he could easily jump to a different area to work on. Or, he could easily move information around if he noticed it would visually look more appealing and create more flow in his ideas.

The format for his movie trailers also clearly labeled where to place the visuals and written text. Being able to visually see his whole text helped him assess how he was doing and was very motivating because he liked seeing the pieces (e.g. images, written text, sound effects, etc.) come together. He enjoyed the possibilities of technology and there was a desire to produce a great final product because of how good it looked.
5.4 Image versus Word

In terms of his perspective of the visual-verbal relationship, Jacob did not see why he had to write in great detail what could easily be seen in his accompanying visuals. This is why he felt he did not need to elaborate when providing a voice over for his slideshow. To him it was unnecessary and boring. Overall, pictures held more value to Jacob than words. They were his immediate focus whenever he created a multimodal text. When researching on the Internet he usually went to Google Images to start his research rather than to the web to find verbal information. Also, the use of visuals, either in the on-screen environment or drawing on paper, better supported his divergent or lateral thinking because of its spatial freedom.

Even though Jacob could find using print a struggle, I believe he still appreciates it and its affordances. I say this because in his personal journal he needed words when pictures could not portray his intent, such as abstract concepts. One text I was particularly drawn towards, which was not included in my analysis since I did not witness any part of the process was his double page spread titled “awkward spring.” On one page was the word “awkward” up at the top and on the other “spring” and below the words he had drawn four tiny pictures of a duck, a rainbow, rain, and some clouds (Figure 5.1). He had drawn this image by himself one day because that was how he was feeling about the spring season, but when asked why he felt that way he could not offer why. A week later when I visited him again and wished to revisit the text, I found he had added the words “big” and “bold” and “small”, in blue marker (Figure 5.2).
Interestingly, his focus was on adding more words as opposed to more pictures. These words were to further describe spring, but again he could not tell me why he chose those exact words except that they described spring. The concept of spring being “bold” was perhaps a difficult one to portray through pictures for him.

I feel the acquisition of writing skills falls under the same idea that all children naturally want to learn and when it appears the opposite, it is because it is difficult for some underlying reason. Equally, I say all children naturally want to write; if Jacob did not struggle with it, he would write without hesitation. This is supported from my observation that every
time we began to start writing together (and if he was invested) he seemed eager and keen to
do it, and verbally he would offer great ideas beforehand. However, as soon as the pencil
went in his hand and his hand went to paper, a switch went off and it was as if he was
immediately reminded that this was not a natural or easy thing for him to do, and his reaction
of frustration was immediate. During the times he was resistant to writing, even with me
writing for him or with the use of visuals, no matter how small the written portion was he did
not enjoy it and he tried to make it as simple a process as possible. Suffice it to say, using a
multimodal approach allowed him to better demonstrate his knowledge, confidence, and
construct and portray his identity. Allowing him to use visuals and valuing his visuals can
help push him into writing more so than if his text was only print-based.

5.5 The Role of “Talk”

Having the opportunity to talk his ideas out whether it was to debate or ponder an
idea was helpful in scaffolding him towards organizing his thoughts and helped him stay
focused on the task at hand. Others have shown talk plays a specific role in the production of
meaning (Pahl, 2009; Ring, 2006; Taylor, 2006; Wohlwend, 2009). Seldom during my
various drawing-writing activities I came prepared with, would he quietly sit there and work
on his own. Rather, he preferred to raise questions, put ideas past me, or critically reflect on
what we were discussing as he went about his text-making. In fact, he frequently co-
collaborated with his family in many literacy events at home such as the Londineum Sun
newspaper with his father.

When we worked together he would frequently want to go show family members
what he had created, and so “significant others” (Ring, 2006) definitely played an important
and influential role. I also believe a reason for Jacob’s strong critical thinking skills is partly
a result of these interactions and his close family relationships; both his parents and sister
would engage in conversation with him and ask questions whenever he presented one of his
texts as opposed to offering a typical “that’s nice” response. They made him reflect on what
he was doing and caused him to (re)transform his meaning in many cases. His family’s
positive influence and encouragement pushed him to persevere with his texts.
Chapter 6: Summary and Conclusion

The findings discussed in the previous chapter support the research that inevitably how children engage in meaning-making is influenced by overt instruction; their background knowledge and practical experiences; their sociocultural background; and their motivation as sign-makers (Kress, 1997). When these influences are positive, it encourages children to become invested in their learning, establish a strong sense of self, and flourish.

Jacob is clearly a literate learner of the 21st century who is especially enthralled and excited to use technology. He finds it more powerful than pen and paper. It would appear, from what I learned through my conversations with the family that Jacob has dealt mostly with teachers of the old mindset. As research suggests, this could be due to various reasons including lack of resources (e.g., updated computers and software) or professional development and training in the area of 21st century skills (Coiro et al., 2008; Knobel & Lankshear, 2006). Without the knowledge, understanding, or resource support it is difficult for educators to move forward in their own teaching philosophies and understanding of the potential of multimodal communication and multiliteracies pedagogy. Furthermore, if there is no acknowledgement of new approaches to learning, then it makes it difficult for either teacher or student to bridge the gap between traditional and new literacy practices and there remains a disconnection. Students like Jacob will continue to be frustrated and their development may be compromised.

At the same time, it is hopeful that as new generation teachers start to replace older ones, they will already be of the new mindset and most likely feel motivated and uninhibited to use ICTs in their teaching. Their knowledge and level of familiarity with technology, including their knowledge of the influences of popular culture and multimedia (Ranker,
2007), will hopefully allow new ways of teaching to influence more traditional models so ICTs may officially and effectively become part of the learning experience. This can result in making learning in school as meaningful as outside of school (Gainer & Lapp, 2010).

With respect to students who struggle with writing, they may encounter difficulties due to having to coordinate complex planning strategies as they generate ideas in conjunction with the action of transcription. The use of drawing, while it is not a new idea and has always been suggested as a pre-writing tool, can help reduce the information-processing demands. It is suggested that drawing is relatable to the narrative form and may provide a better match between the systems of representation used in thought and expression; this is why it can help the flow of ideas during brainstorming and during the beginning stages of writing (Caldwell & Moore, 1991). It is now imperative that we continue to look at how we may better use drawings in the 21st century as tools for writing.

For those children who find writing a challenge, by maintaining a monomodal approach and traditional teaching methods, we are in essence squashing their creativity, as defined by Vygotsky (2004). As Jacob demonstrated, children’s creativity needs to be fostered so they can confidently take risks in their learning and produce new Available Designs, from which they can pull from and utilize in their meaning-making. This propels their learning forward. Multiliteracies pedagogy design which supports new literacies practices has huge benefits for a child’s creativity, imagination, motivation, identity development, and sense of agency. With that being said, it is important to remember that new literacies should not be expected or perceived as replacing traditional ones (Gainer & Lapp, 2010). Leu (2002) equally emphasizes that print is not disappearing nor should it be considered less important than visuals despite the message we are becoming a visual society.
It is their interplay is becoming more complex. Images simply need to be valued equally as the printed word.

6.1 Pedagogical Implications

The findings from this case study have several pedagogical implications to consider which could ameliorate the learning experience for today’s learners, especially those who are dual-exceptional or who have a learning disability. I feel there are still assumptions among many that a “gifted” child should automatically excel in all academic areas and that their so-called struggles, for example with writing, are a result of low motivational factors and laziness (Yates et al., 1995). Unfortunately, this has led to what some have termed “Underachievement Syndrome” (Rimm, 2008), which is when children do not perform to their full potential; however, underachievement does not necessarily indicate a lack of intrinsic motivation. Particularly male gifted students can be described as “selective achievers” (Hebert & Schreiber, 2010). Contrary to what some may believe, these students are in fact goal-oriented, self-regulated, and also have confidence in their abilities; yet, they tend to meet their potential only when they pursue topics of personal interest because this is when learning is meaningful and serves a purpose (Hebert & Schreiber, 2010; Rimm, 2008).

6.1.1 Writing Practices

The findings of this study support the research which indicates a need to reassess current teaching practices when it comes to writing. Writing is no longer just about the written word, because, as Jacob showed, allowing semiotic modes to co-emerge in a child’s composition can motivate that child and reflects his or her investment, creating a richer learning experience.
Also, even though writing was historically taught as a linear process there has been a better understanding over the past few decades that this is not representative of the recursive nature of written composition. In ways it is easier to observe this recursive approach through the affordances of new digital technologies, which are enabling children, including Jacob, to work in a way that seems more natural to them and better reflects how they think and learn. The computer programs he used let him design and create in a fashion that was more fluid, as he moved spatially between the elements of his composition.

Finally, having Jacob write using the traditional method which requires revisiting, revising, and rewriting copious amounts of print does not bode well for him; it taxes his executive functioning skills and ultimately leads to frustration, resistance, and avoidance behavior. Acknowledging how the present student population prefers to learn and think will require the traditional teacher’s linear and monomodal expectations of (story) writing to shift and to be one that allows a hybrid space for their students to compose. With this comes the need for teachers to learn how to properly scaffold (Coiro et al., 2008; Edward-Groves, 2012). Educators need to realize they are limiting their students’ literacy potential if only utilizing digital technology to reproduce traditional literacy practices based on alphabetic-based texts (Lankshear & Knobel, 2007; Merchant, 2007). They need to learn how to scaffold children to reflect on and discover the different roles and affordances of each mode and how the modes work off each other’s potentials without creating redundancy in their texts (Choo, 2010). To be strong writers means they should also be taught to consider the different reading paths the audience may take which means understanding the knowledge the reader not only has, but will also need. At the same time, with the changes of focus in new ways of text-making comes questions such as the element of aesthetics which students seem to instantly
gravitate towards because, “unlike traditional forms of writing tasks, the author’s role is to make the experience of reading the text more important and compelling than its message” (Choo, 2010, p.174). Whether this becomes a problematic feature of new literacies or not is yet to be discovered. However, it does reflect children’s astute observation that visuals, for example, when they create their PowerPoint presentations or websites, need to immediately capture the audience’s attention. It also confirms the need for educators to value the visual design features and understand they hold powerful significance for students in their work.

6.1.2 New Literacies and Learning Disabilities

Teachers need to understand that when it comes to reading a contemporary text it is no longer a one way street. As Kress and Van Leeuwen (1996) explain they can be circular or even diagonal, depending on the reader, and teachers need to remember that literacy is more than just reading and writing print. Also, new technologies have particular promise for students with an LD or who are GD/LD, and fortunately education systems are realizing the academic benefits of digital devices such as iPods, iPads, and other tablet computers (Banister, 2010). With the ever increasing number of diverse computer programs and applications which are continually becoming more sophisticated, there is potential to customize learning to help students in several areas, such as with organization with iprocrastination, icalendar, and Evernote; for fine-motor skills there are applications like Dexteria; and for reading and written output there is ComicLife, iBooks, Inspiration, and Dragon dictation. In the end, these tools and applications and programs have potential to support diversity and different ways of thinking that traditional ways cannot.

Programs with boundaries and specific formats that incorporate multiple modes of communication are not only engaging, but allow students with LDs to better demonstrate
their knowledge and feel successful. The way they can support weak organizational skills have already been discussed in detail and because of this teachers should try to familiarize themselves with the best applications and programs available and learn how to effectively incorporate them into the classroom. The programs I witnessed Jacob use (for his slideshows and movie trailers) worked because the layouts acted like a graphic organizer that was actually part of the process and product thereby reducing the disconnection between the two stages of composition. Some children can struggle with transferring information between their brainstorming, outlining, and final product.

Finally, many programs today create very professional looking products. Jacob’s movie trailers are perfect examples of this. This helps make students with LDs proud to share their work with others, especially those who may have dysgraphia or weak fine-motor skills and who might feel vulnerable if they had to write or draw out their work.

Even if a child with an LD prefers not to use computers or digital tools in his or her meaning-making, the research in this study still suggests that overall by allowing a child to demonstrate his or her knowledge and engage in meaning-making practices through modes he or she is naturally strong in can only result in positive benefits to his or her development. This can hopefully help students have confidence in themselves as learners and to tackle the more challenging tasks in their learning. In this case it was trying to help a child bridge into traditional forms of writing.

To incorporate a more multimodal approach within the curriculum, simple changes can be made such as providing multiple choices for project work. Instead of asking for a two page essay, allow students to create a drama piece, a hybrid text, a video, or allow them to propose an option to the teacher. Whenever students are to create a digital text, discuss
effective processes of design and have them reflect on their decision making.

At the same time, when it comes to incorporating new digital technologies into the curriculum, educators should have a clear idea of how to manage them. For example, being prepared to handle the potential distractability that iPads might create in the classroom will be of upmost importance, as well as staying on top of what’s new and current in the world of applications-yet without becoming overwhelmed by the thousands that are available (Banister, 2010). Educators also need to know how they will instruct and manage the wide diversity of techno-knowledge among their students. That is, they need to have a clear understanding of their role in their students’ digital learning. Mark Warschauer (2007) points to the paradox of mentored versus autonomous learning. He states while there is more opportunity for autonomous learning with on-line projects, the unstructured learning environment this can create has implications because children still need scaffolding with how to collect, analyze, and compare on-line data and with knowing how to use it. Students learning in an on-line digital environment do best with a strong and central role from the teacher, as opposed to a teacher guiding from the sidelines and this is particularly true for those with a learning disability (Warschauer, 2007). In the end, it is important to make sure the education system does not create “new disabilities” with the introduction of new technologies.

### 6.1.3 Supporting Identity and Agency

Teachers need to be providing opportunity for students to create identity texts so that they can affirm students’ identities, thereby increasing their competence, motivation, and investment to learn (Bernhard et al., 2006; Cummins et al., no date). This affirmation can be especially meaningful for the marginalized student whether they have a learning disability or
are even learning English as a second language. For example, teachers can create opportunities for children to create identity texts when they have to reflect and make a personal connection to a novel they are reading; or they can create an autobiographical photo-poem (Choo, 2010); or when they recognize that a student considers him or herself an expert on a certain topic or subject matter. By allowing such opportunities, teachers will hopefully notice intrinsic motivation is taking place which helps a child’s skills develop (Wigfield et al., 2004).

At the same time, teachers need to be aware of the connection between relations of power, identity, and learning because factors like investment and (un)inhibition are socially constructed through this inequitable power relationship (Peirce, 1994). For example, the boy in Kendrick and McKay’s (2004) study felt restricted because he knew the teacher would not like him to write about violence. Also, in my experience teachers have a tendency to tell students working on a project to do the real work first, which is the writing, before looking for pictures on the Internet; which for some students can give the message that pictures and visuals are in fact, not important to their work (or grade for that matter). This creates struggle with their social identity construction and can diminish their sense of agency. I would venture to say that Bonny Norton Peirce’s (Peirce, 1994, 1995) research on relations of power, identity, and language learning for female, language (L2) learners can be applicable to students with learning disabilities as well. She uses the term “investment,” rather than motivation to best describe the socially constructed relationship women have to the target language. Similarly, this can be analogized to students with learning disabilities and their learning endeavours because relations of power also affect their construction of social identity, determine marginalization, and can impact their level of investment as they try and
reach “target” learning goals.

6.2 Limitations of the Study

I acknowledge this is a single case study, the findings of which should not be universally generalized to all students who are designated as being dual-exceptional (GD/LD); yet, I believe it would not be beneficial to dismiss the importance of these findings. In answer to the critique it lacks scientific rigour and is too subjective (Yin, 2009), I am confident it has considerable value to strengthen the growing body of research (Van Wynsberghe & Khan, 2007) in the field of literacy. Based on my research and findings there are indications there is a strong possibility that other similar case studies may come up with other potential patterns.

I found that the length of time of my sessions and the frequency with which I visited my participant was a limitation, especially when writing became the focus and because the participant struggled with written output. It would take time to have the participant become settled, focused, and engaged. Also, if I wished to revisit a text we had previously worked on, sometimes with a week or two in between visits, it would take a significant chunk of time to review what we had already discussed and worked on. Several times the impetus to continue working on an old text was quickly lost as it was “old news” to him. Ideally, I would have made bi-weekly visits at the beginning in order to see more activities through to completion. Also, to encourage new habits or ways of thinking and to properly scaffold a child I believe a more intense approach is best, and so I feel my visits were not regular enough. To instill more of a change there would have to be consistent and constant reinforcement across all contexts, meaning home and school. However, in this situation it was impossible to observe and know what was being reinforced in the classroom.
I also would take more time to carefully think about how I would discuss the texts with the participant and how I would phrase my questions. Several times I found he would shrug his shoulders and say, “I don’t know, “Isn’t it obvious?” or, “Just because.” Thus, I would need to reflect on the ways I would handle such curt responses.

Finally, this family was a particularly busy family and generally had plenty to do while I worked with Jacob. I recognize that they welcomed me to work with their son and wanted me to help their son, however, it would have been fruitful and enlightening to have had more opportunities to observe Jacob engage with his family. The interactions I did observe were quite short and usually at the beginning or end of our session and I found myself wanting to observe more.

6.3 Future Research

The findings from this study indicate the need for further investigation beyond a single case study and involving more than writing multimodal texts on topics of personal interest. The fact remains that print still plays an important role in today’s world even though society seems to be becoming increasingly visual in its communication (Leu, 2002). To prepare children for their future careers and the “knowledge society” (Cope & Kalantzis, 2009b) and to help them be able to efficiently handle print in the cyberspace world means that it is necessary to further investigate how children use new literacies and new digital technologies to tackle more difficult texts. Hypertexts, hyperlinks, and hypermedia have already been shown to have shifted how we read as well as our reading comprehension processes (Coiro, 2003; Coiro et al., 2008; Leu, 2002). This is most likely true for writing too, as was shown through Jacob’s non-linear ways of composing.
Print will remain integral for networked information technology, meaning students will need to have strong literacy skills and be prepared and well organized to locate, critically analyze, and synthesize vast amounts of complex (print) information on the Internet (Coiro, 2003; Leu, 2002). Thus, more research is needed in terms of how to help students branch into academic writing and for them to understand other genres of writing. It seems unrealistic to always be able to use personal experiences (Vygotsky, 2004) for all writing assignments across the curriculum. Academic writing involves a different discourse and skills. It involves research which requires being able to navigate oneself fluently on the Internet. This has even greater implications for those children who not only struggle with writing but also with reading and other language-based learning disabilities. Thus, I am curious about how a multimodal and multiliteracies approach can help these students to compose more difficult pieces of writing and across the curriculum. Kress (2000b) has somewhat ventured into this area when he looked at the science reports created by thirteen year olds on onion skins, but a small science report is a far cry from a research essay. Part of the answer lies in learning more about the differences between writing on-screen compared to on paper (Bezemer & Kress, 2008). It would also be interesting to see if children with learning disabilities and even children learning English as a second language navigate themselves in non-linear ways that are different from children who do not struggle with print or who do not have learning disabilities that are language-based. Finally, the topic of new technologies and students with learning disabilities, in a general sense, is an area of need for ongoing research, so that we can better understand how they both help and impede these students.
6.4 Conclusion

The purpose of this qualitative case study was to address a gap in the literature and describe the manner in which a child diagnosed with a writing learning disability utilized visual modes of communication in his meaning-making. There was particular interest in observing how images motivated him and if it seemed possible to help him bridge the gap between his contemporary multimodal ways of text-making and traditional print-based ones. This study, I feel, was important to undertake and was worthwhile because little research has been done on children of average to above average intelligence who struggle with print yet can competently demonstrate their knowledge through other modes of communication.

Even though definite answers may not have been found in terms of whether it is possible to help a child bridge the gap between traditional and contemporary modes of writing, the findings still contribute to the body of research in the fields of multimodality, multiliteracies, and new literacies. It should be remembered that visual methodology is “not to promote truth. We seek to make sense of social phenomenon” (Lynn & Lea, 2005, p. 215), which I feel I did with this case study. Too often there is a need to want answers and so there is a demand for concrete fact, not the abstract. In terms of the guiding questions and understanding the phenomenon of one particular child who was attracted to images and how he used them in his text-making, and his perspective of the word-image relationship, I feel this study succeeded. The findings were positive and I believe there is potential for new literacies to help a child who has a learning disability in writing bridge into more traditional literacy practices. The study’s findings also reinforce the idea that children’s identities need to be affirmed and honoured not only at home, but in the classroom so they feel empowered and feel in control of their learning. When they feel they have the power in their literacy
practices to explore imagined communities and imagined identities, such as Jacob did in his home context, this is when their creativity shines and authentic learning takes place and encourages children to, as the NLG declare design their social futures.

The research presented in this study reminds me that my own personal teaching philosophy needs to continually evolve to keep up with current theories. A question I must routinely ask myself, as a learning resource teacher, is what is my responsibility as an advocate for my students in the classroom setting? I believe, as an educator, that schools have a responsibility to nurture and support their learners to the best of their ability. With increasing awareness of the different cognitive-learning profiles and diversity of students in general, and as teachers begin to understand the potential of new literacies, they will need to take greater responsibility and push boundaries in their own learning.
References


Cummins J., Bismilla, V., Chow, P., Cohen, S., Giampapa, F., Leoni, L., ... & Sastri, P. (no date). ELL students speak for themselves: Identity texts and literacy engagement in multilingual Classrooms [1].


Kendrick, M., & Rowsell, J. (in press). The visual turn: Transitioning into visual approaches to literacy education.


Appendices

Appendix A  Assent Form for Child

January 19, 2011

Consent Form for Parents/Guardians

Bridging the gap between traditional and new literacies
for students with learning disabilities

Principal Investigator:

Co-investigator:

Purpose:
I am conducting a study to explore the ways in which students, who struggle with written output, engage in new literacy practices (e.g., such as using the computer to write blogs, pictures to tell stories, etc) and whether or not their alternative ways of making meaning through other modes of communication (e.g., visual, digital, musical, etc), may help motivate and support their engagement with traditional, print-based texts. I am wishing to focus on the mode of image and I would like to document and discuss the ways children may interpret and incorporate drawings, pictures, and visual technology, for example, into their texts.

I am conducting this research in partial fulfillment of my graduate degree in Language and Literacy Education at the University of British Columbia.

Procedures:
The main participant (your child) will be observed over a 6-month time frame. These naturalistic observations will initially occur, at your convenience, once a week for the first three months and then once or twice a month for the final three months. These visits will take place in your home. I will visit with your child for approximately one to one and a half hours each visit. I will be an observer, but at times I may also be a participant as I would like to engage in some activities with your child. I aim to observe and discuss both the process and product of your child's text making. I will also be observing and making notes of your child as they interact with other family members, to see in which ways he/she collaborates in family literacy practices. I will collect your child’s texts by taking digital photographs, making written notes, and talking with your child. I will also take pictures of both the process and final product.
Once a month, I will interview your child and potentially yourself regarding the texts your child created and to discuss how things are going at school. In your home, I will take photographs of your child’s work, make audio recordings of our interviews, and make written notes.

If you are involved with the child during any of these occasions, my conversations with you will be about your interactions with your child, and your perspectives of his/her text making. When I am observing your child in your home, I will make every effort not to disrupt your child’s everyday routine, as I plan to document the natural interactions and practices of your child.

Confidentiality:
I aim to maintain your child's and family's identity as confidential as possible through using pseudonyms (false names) for your names in the study. I will also avoid using any other identifying information, however, it is important to note that this does not guarantee an hundred percent confidentiality. You will also have the right to withdraw from the study at any time. Photos that include your child’s face will not be presented in any public forum such as papers and presentations. Only photos that do not include your child’s face will be used in papers and presentations.

Dissemination of Research:
There is the potential that I may like to share what I learn from the study at local conferences and through publications.

Inquiries:
I will be happy to answer and questions about the research at any time. Please do not hesitate to contact me or my supervisor by telephone.

Concerns:
If you have any concerns about your rights, or the treatment of your child as a participant in the research, you may contact the UBC Office of Research Services at (604) 822-8598.

Consent:
Your signature below indicates that the information about this study has been discussed with you and that you have been given a copy of this letter. Your signature also indicates that you freely and willingly give your consent for your child to be involved in the study. You may also withdraw your permission at any time without any consequences.

____________________________
Signature to participate in the study

__________________________
Printed Name
Appendix B  Consent Form for Parents

THE UNIVERSITY OF BRITISH COLUMBIA

Appendix B  Consent Form for Parents

January 19th, 2011

Department of Language & Literacy
Education
2125 Main Mall
Vancouver, BC, Canada V6T 1Z4
Tel: (604) 822-5788
Tel: (604) 822-3154

Consent Form for Parents/Guardians

Bridging the gap between traditional and new literacies for students with learning disabilities

Principal Investigator:

Co-investigator:

Purpose:
I am conducting a study to explore the ways in which students, who struggle with written output, engage in new literacy practices and whether or not their alternative ways of making meaning through other modes of communication, may help motivate and support their engagement with traditional, print-based texts. I am wishing to focus on the mode of image and I would like to document and discuss the ways children may interpret and incorporate drawings, pictures, and visual technology, for example, into their texts.

I am conducting this research in partial fulfillment of my graduate degree in Education at the University of British Columbia.

Procedures:
The main participant (your child) will be observed over a 6-month time frame. These naturalistic observations will initially occur, at your convenience, once a week for the first three months and then once or twice a month for the final three months. These visits will take place in your home. I will visit with your child for approximately one to one and a half hours each visit. I will be an observer, but at times I may also be a participant as I would like to engage in some activities with your child. I aim to observe and discuss both the process and product of your child's text making. I will also be observing and making notes of your child as they interact with other family members, to see in which ways he/she collaborates in family literacy practices. I will collect your child’s texts by taking digital photographs,
making written notes, and talking with your child. I will also take pictures of both the process and final product.

Once a month I will interview your child and potentially yourself regarding the texts your child created and to discuss how things are going at school. In your home, I will take photographs of your child’s work, make audio recordings of our interviews, and make written notes. If you are involved with the child during any of these occasions, my conversations with you will be about your interactions with your child, and your perspectives of his/her text making. When I am observing your child in your home, I will make every effort not to disrupt your child’s everyday routine, as I plan to document the natural interactions and practices of your child.

**Confidentiality:**
I aim to maintain your child's and family's identity as confidential as possible through using pseudonyms (false names) for your names in the study. I will also avoid using any other identifying information, however, it is important to note that this does not guarantee an hundred percent confidentiality. You will also have the right to withdraw from the study at any time. Photos that include your child’s face will not be presented in any public forum such as papers and presentations. Only photos that do not include your child’s face will be used in papers and presentations.

**Dissemination of Research:**
There is the potential that I may like to share what I learn from the study at local conferences and through publications.

**Inquiries:**
I will be happy to answer and questions about the research at any time. Please do not hesitate to contact me or my supervisor by telephone.

**Concerns:**
If you have any concerns about your rights, or the treatment of your child as a participant in the research, you may contact the UBC Office of Research Services at (604) 822-8598.

**Consent:**
Your signature below indicates that the information about this study has been discussed with you and that you have been given a copy of this letter. Your signature also indicates that you freely and willingly give your consent to be a participant and to be involved in the study. You may also withdraw your permission at any time without any consequences.

____________________________  __________________________
Signature to participate in the study  Printed Name

____________________________  __________________________
Signature to participate in the study  Printed Name