

I'LL TELL THE STORY MY WAY!
MULTI-PERSPECTIVE, MULTIMODAL STORYTELLING
IN AN ELEMENTARY CLASSROOM

VERONIKA M. CHARLES

A DISSERTATION SUBMITTED TO
THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

GRADUATE PROGRAM IN EDUCATION
YORK UNIVERSITY
TORONTO, ONTARIO

September 2018

© Veronika M. Charles, 2018

Abstract

The project investigated how elementary students engaged in creating 21st-century narratives with multiple perspective storylines enriched with images, videos and sound. The project was implemented as three substudies - Study A, B & C, in specific instructional contexts. Study A & B employed the use of digital technology and Study C did not. All were conducted in two Toronto elementary schools over a period of six months with a total of forty-four students (comprised of 31 girls and 13 boys) aged 10 to 12, and with the collaboration of their teachers. The data collection took the form of participant observation (Spradley,1980) and detailed writing analysis. The initial procedure used a pictographic map of the structure of *Snow White* from which 4 class-created stories were generated, resulting in 55 students' stories told from the various characters' perspectives. The results showed the project's activities empowered the students and engaged them. Perspective taking in their stories allowed students to examine the lives of others, emotionally process the story, and empathize with their story characters' predicaments. Findings from the project were 1) students who wrote on computers produced more text and were more reflective of their thoughts; 2) students did not collaborate in their writing when using computers while students writing in a traditional way with pencils and paper notebooks did; 3) boys and girls had distinctive narrative styles even when using the same story's content and structure; and 4) students did not use the technology as a *tool* to enhance personal creativity but rather as a *substitute*. Perspective writing may be easy to implement into practice and there is an indication that the method is widely applicable.

Keywords: digital storytelling, multiple perspectives, multimodal composing, elementary grades, education

Acknowledgments

This study took off from my master's thesis and brought my interest in fairy tales and children's storytelling into the 21st century which is laden with new sensibilities and exciting possibilities in how to convey a story.

I want to thank my supervisor, Dr. Karen Krasny, for her support, her guidance and for bringing me to the completion of my study. Her enthusiasm for my project sustained me and kept me on track.

Many thanks to Dr. Jennifer Jenson, for being there during the course of my studies and for being instrumental to my success in obtaining the Social Science and Humanities Research Council award. I will never forget the generous offer of her office space to recover during the occasions when I was a teaching two classes, attending a lecture and an evening seminar, all in the same day. As well, I want to thank the other committee member, Dr. Heather Lotherington, for her encouragement to dig deeper within my project analysis.

I am grateful to the educators who opened the doors to their classrooms, in particular to Mira Campbell, who was a companion on my quest into the unknown. Many thanks to the students who participated in the project, for allowing me to get a glimpse into their worlds.

Finally, I want to thank David and Alexandra Charles who stood by me through the years of my research, cheered me on, and helped me in countless ways. Though I have travelled to many distant and exotic places in my lifetime, this project was the biggest and the most adventurous journey of them all.

Table of Contents

Abstract	ii
Acknowledgements	iii
List of Tables	vii
List of Figures	viii
Chapter 1: Background of the Study	1
What is a “hyperstory”?	3
Why multiple perspectives?	5
Curricular Significance of the Study.....	9
Study Summary.....	10
Theoretical Framework.....	11
Chapter 2: Literature Review	14
Narrative and Multiple Perspectives	14
Stepping into a fictional world.....	14
Neurological framework.....	18
Narrative and “Storyworld”.....	19
Storyworld.....	20
Immersion in storyworld.....	21
Learning in a storyworld.....	22
Hypertext Formats	24
What is hypertext?	24
Hypertext navigation	26
Brief history of hypertext.....	27
Hypertext as playground	28
Hypertext narrative	32
Multimodal Storytelling	33
Creativity	36
The role of cognition in creativity.....	39
Case Studies in Education	42
Multiple perspectives case studies	42
Hypertext case studies in education	45
Multimodal composing - case studies in middle grades	50
Conclusion.....	53

Chapter 3: Methodology.....	55
Project design.....	55
Designing a template for the classroom hyperstory.....	56
Initial classroom procedure - creating a new story.....	59
Participants and context.....	60
Study A and Study B.....	62
Participating teacher/ librarian.....	62
Study A – Students/ Participants.....	62
Study B – Students/ Participants.....	63
Study C.....	63
Students/participants.....	64
Project methodology.....	66
Method of obtaining data and method of analyzing results.....	67
Framework for analysis of students’ perspective writing.....	69
Framework for analysis of observational frequency count of students’ work.....	69
Coding for a reflection and an emotion	71
Chapter 4: Data Analysis of the Three Studies.....	74
Study A.....	74
Synopsis and template of the class-created story “The Competition”.....	74
Writing from the characters’ perspectives. Description of the classroom process	76
Writing with digital technology.	76
Enriching the story with multimodal elements	79
Narrative analysis.....	82
Making meaning for themselves; personal connections.....	83
Characters’ portrayals.....	84
Study B.....	90
Synopsis and template of the class-created story B a) “The High School Madness”.....	91
Synopsis and template of class-created story B b) “Brothers in Arms”.....	93
Writing from the characters’ perspectives. Description of the classroom process	95
Writing with digital technology.....	95
Enriching the story with multimodal elements.....	97
Study B a) - Narrative analysis of the story – “High School Madness”.....	102
Perspective taking: Introducing characters.....	102
Narrative playground.....	114

Study B b) Narrative analysis of the story “The Brothers in Arms”.....	124
Characters’ portrayals.....	125
Study C.....	137
Synopsis and template of the class-created story “The Incident”.....	137
Writing from the characters’ perspectives. Description of the classroom process.....	139
Writing without digital technology.....	139
Gender differences in writing.....	141
Multimodal storytelling without digital technology.....	143
Project’s culmination; presentations by the characters and the “News Conference”.....	145
Narrative analysis.....	146
Characters’ portrayals: Perspective taking.....	148
Multimodal work.....	165
Study A.....	165
Study B.....	172
Study C.....	181
Chapter 5: Discussion of the Results.....	188
Section 1 - Narrative; Class-created baseline stories.....	188
Recasting characters’ archetypal roles in the <i>Snow White</i> story.....	191
Narrative playground - the class-created story.....	193
Section 2 – Perspective Taking.....	193
Writing style.....	195
Section 3 - Writing on computers.....	196
Comparing results from studies with use of digital technology and study without its use...	198
The effect of digital technology on students’ writing.....	201
Section 4 - Gender differences in writing of students’ stories.....	203
Section 5 - Multimodality.....	213
Chapter 6: Implications for Practice	221
Conclusion.....	225
References	227

List of Tables

Table 1. Study A Number of Emotions and Reflections in Characters' Stories.....	89
Table 2. Study B a). Number of Emotions and Reflections in Characters' Stories.....	123
Table 3. Study B b). Number of Emotions and Reflections in Characters' Stories.....	135
Table 4. Study C. Number of Emotions and Reflections in Characters' Stories.....	163
Table 5. Study C. Comparing Girls' and Boys' Average Counts.....	164
Table 6. Number of Emotions and Reflections in Characters' Stories - Average Students' Counts.....	199
Table 7. Comparing Girls' Stories with and without Digital Technology.....	201
Table 8. Comparing Boys' Stories with and without Digital Technology.....	202
Table 9. Differences in Results of the Digital Technology Effect on Girls' and Boys' Writing.....	202
Table 10. Number of Emotions and Reflections in Characters' Stories - Girls versus Boys.....	208
Table 11. Comparison of Average Counts in Girls' and Boys' Stories without the Use of Digital Technology.....	209
Table 12. Comparison of Average Counts in Girls' and Boys' Stories with the Use of Digital Technology.....	209

List of Figures

Figure 1. Template for ‘Snow White’ story.....	58
Figure 2. Project at a glance.....	65
Figure 3. Template for Study A story ‘The Competition’.....	75
Figure 4. Template for Study B a) story ‘The High School Madness’.....	92
Figure 5. Template for Study B b) story ‘Brothers in Arms’.....	94
Figure 6. Students improvising their song and dance number.....	101
Figure 7. Collage representing Ana character.....	103
Figure 8. The loneliness of Ana (green figure) in school.....	104
Figure 9. Collage expressing Ana’s feeling for Zach.....	105
Figure 10. Ana’s shrine of Zach.....	106
Figure 11. Screen capture of Ana’s text to Steven.....	107
Figure 12. Digital collage of Steven’s interests.....	109
Figure 13. Image of the cell phone screen with the message.....	111
Figure 14. Superimposed drawing of Ana on a video clip.....	115
Figure 15. Zoe’s drawing and her list.....	116
Figure 16. Emoji added as an illustration.....	118
Figure 17. Thought bubble as part of the text.....	120
Figure 18. Template for Study C story ‘The Incident’.....	138
Figure 19. Students’ pages reflecting Story C template.....	140
Figure 20. Samples of students’ pages with images within students’ texts.....	144
Figure 21. The students’ writing with onomatopoeic words.....	144
Figure 22. Students collaborating while doing the artwork.....	166
Figure 23. Students’ work on finished pages from their hyperstory.....	166
Figure 24. Green Screen video procedure and the resulting page from the e-book.....	167
Figure 25. Screen shot from the video in the e-book.....	167
Figure 26. Amber’s and Brooks’ pages.....	168
Figure 27. Same time, same place but two different perceptions.....	169
Figure 28. Amber’s and bird’s pages.....	169
Figure 29. Combining visual elements.....	170
Figure 30. Samples of interactive pages.....	171
Figure 31. More samples of interactive pages.....	171
Figure 32. Student’s drawing of the character’s loneliness in school.....	172
Figure 33. Two drawings of story characters.....	173
Figure 34. Student’s digital collage and newspaper article.....	174
Figure 35. The Internet photo reference and student’s sketches.....	176
Figure 36. Some of the students’ choices for green-screen ‘locations’.....	177
Figure 37. Student’s sketch and avatar of Steven.....	178
Figure 38. Students’ avatars of Zach.....	178
Figure 39. Student’s avatar of the principal and screen shot of video.....	179
Figure 40. Photos from making video with green screen.....	179
Figure 41. Students’ avatars of the villain and the hero.....	180
Figure 42. Multimodality within the students’ text pages.....	181
Figure 43. Students’ drawings from the ‘magical realm’ of their stories.....	182

Figure 44. Graph of unicorns' dance; map of fluf land.....	183
Figure 45. Family trees of unicorns and bunnies.....	183
Figure 46. Student's drawing of the unicorn with siblings.....	184
Figure 47. Student's unicorn's story in panels.....	186
Figure 48. Dance of the Unicorns drawn by two different students.....	187
Figure 49. Templates of the class-created stories from the "Snow White" structure.....	190

Chapter 1

Background of the Study

Digital technologies have opened up new pathways for storytelling, allowing the tellers and readers to interact with a story and explore alternate structures. Elements of the “old” are being reshaped to become parts of the new, and integrated into new sets of practices. While in the modern industrial world there is a tendency toward thinking, acting and organizing that was singular, linear, centered, fixed, enclosed and individualized, the postmodern world tends toward multiplicity, non-linearity, flexibility, openness, and collectivity (Lankshear & Knobel, 2011).

My research investigates *how* children’s storytelling is shaped by enhanced opportunities and tools to produce multiple perspective narratives enriched with images, videos and sound. The research built upon the success of my master’s thesis, *Making Traditional Tales Relevant for Contemporary Children* (2006), that investigated whether children could recreate folktales and liberate them from their fixed narratives. That study employed Vladimir Propp’s structural system with children and was guided by the works of Bruno Bettelheim, C. G. Jung, Andre Favat and Gianni Rodari.

The current research was framed by the questions: (1) How will multiple perspective storylines through multimodal representations shape students’ storytelling? (2) How will students express the characters’ points of views of the events, the characters’ motivations and emotions in their individual work? (3) What can students’ creation of the storyworld tell us about how they see their own reality and the world in which they live?

While children's love of stories remains constant, the rigid linear texts they confront in classrooms no longer reflect what they encounter in their lives outside of school. Twenty-first-

century narratives are evolving into new hybrid forms combining multimodal expressions such as “image, gaze, gesture, movement, music, speech, and sound effect” (New London Group, 1996) and multiple points of view. While numerous studies have been concerned with how and what children read (Snow, Burns & Griffith, 1998; Kamil, Pearson, Moje & Afflerbach, 2011), far fewer investigations have focused on how children *produce* stories. Jason Ohler (2008) contends that, “‘story’ is becoming a key format for global communication” (p. 4). There is a lack of in-depth study of how primary school children would create new media forms of narrative and how it would affect their comprehension, so that educators will be able to integrate those activities into the curriculum.

New forms of storytelling integrate aspects from multiple disciplines including arts, design, communication and media, writing, acting, animation, and gaming and give rise to critical analyses grounded in educational, psychological, literary, and narrative theories. The digital humanities are replete with language denoting new forms of literacy; for example, *New media writing, digital writing, new literature, multimedia, multiliteracies, hypertext, hyperstory, hypermedia, digital storytelling, multimodal texts, new media work, hyperfiction, interactive fiction, hypertext fiction, digital literature, and electronic literature* (Walker, 2003; Whitehead, 2005) have all been used to designate this form of storytelling. Aarseth (1997) used the term “cybertext” to describe this broad textual category in which hypertext is included. A number of these terms are used interchangeably but to many, it is not clear whether what is being captured by all of these terms constitutes a literary genre or a movement encompassing a number of art forms including writing (Aarseth, 1997; Whitehead, 2005).

A project created for a new medium should make good use of what the medium has to offer and not what just imitates older forms (Miller, 2008). Most e-books, for example, are just

electronic duplications of their former paper versions so they do not take advantage of what the new media can do. What is unique to this new form of storytelling is its ability to create multiple narrative paths, navigate among them, and use multimodal expressions simultaneously or in various combinations. The project builds upon these unique abilities and documents how children engage multimodal literacies.

But how is one to address this new hybrid of a story when there is not yet a clear definition? Perhaps the term ‘hyperstory’ would be the most fitting description.

What is a “Hyperstory”?

Hyperstory is a term coined by filmmaker Margi Szperling (Miller, 2008) to describe the cinematic works she produces. Like *hypertext*, *hyperstory* links different elements together but instead of linking a word to another piece of text, a visual element is linked to another visual element, offering another perspective of the story being told. Hyperstory can be defined as “an interactive, multi-perspective story that uses the engaging quality of a movie to create an evolving learning experience” (Clothier, 2003, p. 1). In her film *Uncompressed*, Szperling tells story from six different points of view. Unlike most commercial movies, *Uncompressed* does not have a main protagonist. Each of the six characters acts as the protagonist of their individual storylines. Each character’s perspective can be viewed in a linear fashion but, according to Szperling, the best way to view the film is to shift between perspectives by selecting any other character’s point of view within chapters as the story unfolds. Every storyline shows how differently the same reality may appear. Because the viewer can move between the different points of view, the filmmaker believes this form can help us grasp the “complex nature of the human character”

<http://filmmakermagazine.com/archives/issues/summer2001/reports/interactive.php#.VUk6zGY>

yXAc). Szperling cites her influences as James Joyce's novels, the movie *Rashomon* (in which a single event is seen through the eyes of different characters), and the theories of the Russian experimental documentary filmmaker Dziga Vertov (1896-1954). Vertov believed that the *film truth* is contained in an organization of film fragments that reveal what is not perceptible to the naked eye (Miller, 2008).

A *replay story* is another term that could be applied to the story that will be created in the research study. Digital media theorist, Janet Murray (2013), defines replay story as “an interactive digital story structure in which the same scenario is offered for replay with significant variations based on parameters that the interactor may control or merely witness in action” (p. 1). Murray divides replay stories into two main forms:

(1) *Multiple points of view* of the same events, sometimes with contradictory memories or additional information missing from other versions, as for example in the Japanese film *Rashomon*, made in 1950 by acclaimed director and screenwriter Akira Kurosawa. *Rashomon* is the story of a woman's rape and a man's murder told in flashbacks by four different characters, each of whom was a witness to the crimes, but each presents a different version of what happened. In this type of story, all points of view share the same reality but any event that has happened cannot be changed although it may be perceived or interpreted differently.

(2) *Multiple instantiations* of the same story elements, as for instance *The Garden of Forking Paths* by Argentinian writer Jorge Luis Borges (1941). The story focuses on a seemingly meaningless act of murder and centers on a mysterious Chinese novel that appears to consist of contradictory drafts. Time in this story is not presented as linear but rather as a labyrinth that embraces infinite alternate realities. This type of story contains a variable world in

which fate is open and events can be changed. Replay stories are cognitively demanding as readers have to integrate multiple points of view or possible variants of the same events.

A *spatial narrative*, a term used for an interactive drama, also relates to the story that will be created in the project. In this form, the user explores the fictional environment in order to find the narrative pieces. A story can have multiple entries through the characters' perspectives. Once the character is selected, the user is free to explore the character's home, garden and neighbourhood, uncovering the story along the way (Miller, 2008).

The multiple points of view, or multiple pathways structure, were used in the theatre play *Tamara*, which premiered in Toronto, Ontario, in 1981 and was written by John Krizanc. The play was staged in a large mansion instead of a theatre, and multiple scenes were performed simultaneously in various rooms. The audience had to choose which scenes to watch, and then followed the characters from room to room (Miller, 2008).

A powerful aspect of the multiple pathways structure is that it allows the viewer to perceive and experience multiple perspectives in a variety of scenarios. What seemed appropriate behaviour through one set of eyes can take on a different meaning from another's viewpoint.

Why Multiple Perspectives?

According to philosopher Ken Wilber (2000), two important truths that postmodernism brought to us are that reality is constructed and that meaning is context-dependent, which means that a multi-perspective approach to understanding reality is called for. But how do we make sense of multiple perspectives when they are presented to us? There needs to be an ability to put ourselves imaginatively in the situations of other people in order to understand their points of view and their feelings. One's understanding of another person's actions in a particular situation

is dependent upon knowing the context and being able to view the situation from that person's point of view. This ability, called "perspective taking", is one of the four distinct aspects of empathy as defined by the Davis Interpersonal Reactivity Index (Davis, 1980, 1983a) that assesses both cognitive and affective components of empathy.

A recent study from the University of Michigan (Konrath, O'Brien & Hsing, 2011), an analysis of data from over 14,000 college students over the past 30 years, shows that since the year 2000, young people have reported a dramatic decline in interest in other people. The researchers used the Davis Interpersonal Reactivity Index (IRI) and measured its four emphatic components: (1) Empathic Concern; (2) Perspective Taking; (3) The Fantasy; and (4) Personal Distress. IRI is reliable, validated and widely used as a measure of empathy to use for a cross-temporal analysis (Konrath et al., 2011).

The authors of the study found that of the four components measured, empathic concern had dropped sharply followed by perspective taking. In comparison to students in the late 1970s and early 1980s, students today are less likely to say that it is worthwhile to put oneself in the place of others or to try to understand their feelings. The researchers speculate that this could have resulted from young people learning to interact in more impersonal ways, as they become dependent on current communication technologies, and because these technologies are deficient in verbal and other interpersonal communicative signals. In an online connection, one only needs to deal with the part of the person seen in a social network. It makes one feel powerful because it allows the individual to connect and disconnect instantly. But it also provides an opportunity to ignore people's feelings and avoid eye contact. Turkle (2011) claims, "Young people don't seem to feel they need to deal with more, and over time they lose the inclination" (p. 293).

By contrast, content analysis of current children's literature shows a trend toward multiple narrative perspectives that challenges the traditional single-voice of narrative fiction (Dresang, 1999; Koss, 2009). Narrative form, voice, and structure are breaking new ground to mirror the different ways information is accessed on the Internet and the texts' multimodal nature. This trend in children's literature also reflects how technological changes impact the way media present stories, using sound bites and fragmented television shows and movies. Often, these narratives require alternative ways of navigating, and there is a lack of understanding about how students approach and understand these types of texts (Koss, 2009).

Dresang (1999) labeled this growing trend in literature for children as "Radical Change," and identified three characteristics that appear in Radical Change texts:

- (1) changing forms and formats, new synergy between words and images, nonlinear and nonsequential organization, and multiple levels of meaning and interactive formats;
- (2) multiple perspectives and points of view, previously unheard voices;
- (3) changing boundaries such as dealing with previously forbidden subjects, characters portrayed in new complex ways, and unresolved endings.

Starry Messenger: Galileo Galilei (1996), a picture book by Peter Sís, embraces all three characteristics of Dresang's Radical Change texts: (1) prose and snippets of information arranged on the pages through artwork; (2) multiple points of entry that include quotes from Galileo and his contemporaries; and (3) text that deals with unusually sophisticated subject for young children. For example, the author/illustrator shapes the blocks of text-like images - celestial spirals or a form of a human eye - which means that the reader has to manipulate the pages physically in order to read them. The large painted illustrations are composed in multiple panels and contain maps and symbols telling the reader a much larger story within the societal context

of Galileo's time. The layout of the book resembles a webpage as it offers readers multiple entry choices: The readers can start by reading the handwritten quotes from Galileo or comments from his contemporaries, and then proceed and relate those comments to the illustration, or they can start by inspecting the complex illustration first, and then read the text that provides extra information in a way similar to hyperlinks.

Books with multiple perspectives give children the opportunity to explore and reflect in order to construct a more accurate picture not just of the story itself but also of their world. The readers need to think critically in order to achieve comprehension. For example, in the picture book *Voices in the Park* (Browne, 1998) the same story is told from four different perspectives – a mother and her son and a father and his daughter. Each perspective has a distinct voice, tone, font, and artwork, and shifts with each view-point and between socioeconomic classes.

Nothing but the Truth (Avi, 1991) is a young adult novel offering multiple perspectives about an incident in a New Hampshire town where a boy in grade nine is suspended from school for humming the United States National Anthem. The story deals with the subjectivity of truth. The author puts the reader in charge – like a private investigator – by presenting him or her with evidence in forms of diary entries, personal letters, school memos and transcripts of dialogue pertaining to an event that happened (or did not happen) in school. The novel asks the reader to decide what really happened in the story.

The *Easy-to-Read-Spooky Tales* (Charles, 2007; 2008) series I authored for beginning readers would also fit under the umbrella of Dresang's Radical Change as multiple perspective narratives. Here, contemporary child protagonists tell each other scary stories related to the situation they find themselves in, and comment on those stories throughout the text. The narrative switches back and forth between the present-day narrators' perspectives and the

perspectives of protagonists of the stories told. Visually, the perspective switch is indicated by a change in font. The last story the protagonists tell is left unfinished leaving it up to the reader to finish.

On the surface, there seems to be a disconnect between the research findings (Konrath, et al., 2011) that show a decline in young people's ability in perspective taking and the trends in the current literature offering multiple perspective narratives to young audiences. Yet, the resulting data from the research study (Konrath, et al., 2011) indicate that there has not been a significant change in the *emphatic component of Fantasy*, that is, of young people's ability to identify imaginatively with the fictional characters in narrative. Drawing on Dewey's (1934) dramatic rehearsal and Damasio's (2003) biological account of empathy, Krasny (2004; 2007; 2016) argues that the human capacity to identify empathetically with others through our engagement with literature and arts can activate moral imagination and enrich our affective relations with others. Perhaps engaging young people with multiple perspective narratives, or even better, giving students an opportunity to create them, could potentially open their eyes to how others feel and view the world.

Curricular Significance of the Study

This research was conducted within a regular instructional context to reflect the early years' language arts curriculum. Students had opportunities to demonstrate an understanding of an oral text and represent the ideas through visual art, music or drama (1.4), make inferences (1.5) and extend understanding of the oral text by connecting the ideas in it to their own knowledge, experience and insights, and to the world around them (1.6) (The Ontario Curriculum, 2006, revised, p. 80). They wrote and used role play to present the perspectives of other characters in a story (1.9) (p. 84), visualized and generated ideas about the topic (1.2), and

gathered and organized those ideas for their writing by using story maps (1.4) (p. 86). The students created drawings and used photographs for the extension of their story (2.1) (p. 87). In relation to the Media Literacy strand, students produced media texts... using a few simple media forms and appropriate conventions and techniques (p. 91).

Furthermore, the research project connected directly to the expectations of the arts curriculum where junior students are to “learn to identify and explore multiple perspectives... explore a range of interpretations, communicate their own ideas and opinions...” as well as “develop their ability to... select appropriate strategies to help them make sense of and create increasingly complex and/or challenging works...” (The Ontario Curriculum, The Arts, 2009, p. 95) The research project’s multimodal nature provided students with an opportunity to explore narrative through role play in drama and visually communicate ideas and emotions (pp. 96-97).

Study Summary

The study was conducted in two Toronto elementary schools with a total of forty-four students aged 10 to 12 and with the collaboration of their teachers over a period of six months. The fieldwork research encompassed three individual case studies referred to as Study A, Study B and Study C. In Study A and B, digital technology played an integral part. In Study C, the students did their work entirely without any digital tools. Although it was not the initial intention to include a study without the use of digital technology, it acted as an interesting comparison. I was a participant observer and guided the project’s collaborative inquiry.

First, the students created their own collective story modeled on a folktale I told them. The story served as a baseline of the study. Then, in groups of four, the students were instructed to retell their story by adopting the perspectives of one of the story’s characters, using multimodal expressions to create multiple narrative paths. The students made decisions about

how they wanted to express their stories using multimedia and traditional art materials. In Study A and B, the digital data were embedded and stored on Google Drive with the assistance of a school information technology specialist. The project was designed to provide optimum opportunities to observe the children's approach to multi-modal storytelling and insights into how they perceive a character's reality. Ongoing observations and talk revealed how students interpreted the story and in turn, told us a great deal about how they saw themselves and their world.

The study was guided by the questions: (1) How will multiple perspective storylines through multimodal representations shape students' storytelling? (2) How will students express the characters' points of views of the events, the characters' motivations and emotions in their individual work? (3) What can students' creation of the storyworld tell us about how they see their own reality and the world in which they live?

Theoretical Framework

The project extends Propp's structural narrative framework by bringing it into the poststructuralism's realm. In my previous study (Charles, 2006) I translated Propp's functions – the building blocks of fairy tales – into pictographs, and demonstrated how they can be used as scaffolding for students to create new stories with meaning. The present study builds upon my earlier work and bridges it with poststructuralist theories (Barthes, 1979; Bruner, 1986) that focus on plurality of text and multiple semiotic signs. The project's multilinear texts from characters' perspectives through multimodal expressions open the narrative for readers/viewers's interpretation and for the construction of their own meaning.

Both traditional narrative inquiry and post-classical narratology focus on story as a meaning-making process. While traditional narratology asks questions such as 'what does the

story reveal about the person and the place from which it came?', poststructuralist narratology widens the narratological scope beyond literary narrative by importing concepts and theories from other disciplines (Ryan, 2004; 2009; 2013). The present project places multiple sequential narrative structures within a large, open container of the 'storyworld' with several entries, and links the individual narratives with each other.

The project draws also on Piaget's theory of creativity (1962). Piaget perceived creativity to occur from an interaction between processes of assimilation and accommodation. Assimilating in Piaget's sense means fitting the problem within existing mental structures, while accommodating involves recognizing that the current structures are not efficient and thus revising them. The external world and knowledge must be first assimilated and then accommodated in diverse situations for creativity to result.

With the arrival of digital technology, children have ever-increasing opportunities for knowledge gathering and study, a so-called "empirical abstraction." But in order to be creative, they also need opportunities to engage in the mental process of building knowledge through mental actions performed on these perceived objects (Piaget, 1981). This "reflective abstraction" is necessary for creativity because, as Piaget argues, new ideas are generated from mental actions, not external objects. In other words, children need to be provided with opportunities for reflection on the things and facts they gathered and the time and space to be able to play with those elements and concepts, which my project offers.

My research investigating students' engagement with hybrid forms of digital storytelling focused on four areas: (1) narrative and multiple perspectives (Ryan, 2004; 2009; 2010; 2013; Harris, 2000); (2) hypertext formats (Aarseth, 1997; Papon, Goldman & Kersey, 2007); (3) multimodal composing (The New London Group, 1996; Miller & McVee, 2012); and (4)

creativity (Cropley, 2001; Kim, 2011; Piaget, 1962; 1981). Analysis of my project will be methodologically informed by theories of Murray's (2011) concept of dramatic compression in which Murray proposes using traditional narrative roles and Propp's functions for creating digital narratives with meaningful variation of the story elements. With regard to the proposed research, this allowed me to document how children exploit traditional narrative roles through digital means.

Chapter 2

Literature Review

Narrative and Multiple Perspectives

Stepping into a fictional world. *Penguin Dictionary of Psychology* (2009) defines perspective as “1 A mental view, a cognitive orientation, a way of seeing a situation or a scene. 2 The arrangement of the parts of a whole scene as viewed from some conceptual, physical or temporal vantage point” (Reber et al., p. 576). We perceive the scenes and the situations in the outside world by our modes of perception (Bronowski, 1978). This means that we do not see the outside world as it is but only as we perceive it through the limitations of our senses.

Neuroscientist Antonio Damasio (2003) distinguishes between two kinds of images that are formed in our sense organs. The first he calls the ‘images from the flesh’ and they manifest as images of neural patterns that result from the interior of the body state. Pain and pleasure are examples of the interior images. The second type, what Damasio calls ‘images from special sensory probes’, are images constructed through a perception of our sensory organs (such as retina, cochlea or nerve endings in the skin) as a response to stimulus, object or event from the exterior or from our mental recall, and they are manifested as neural maps in the appropriate regions of our brain. That, in turn, gives rise to mental images, first to emotions and then to feelings (Damasio, 2003).

As we have evolved to understand each other by tone of voice or by seeing facial and bodily expressions, the current social practices of texting and e-mailing limit creating of images through our senses and neural mapping for formation of our emotional responses. This seems in part to explain the decline of empathy in young people and their lack of interest in understanding other people’s feelings that was discussed in the previous section.

A study by the neuroscience group led by Damasio (2009), explored the neural processes that give rise to admiration and compassion. In an fMRI experiment, 13 participants (6 women and 7 males) were exposed to scripted verbal narratives based on episodes from the lives of real people which were augmented by a combination of audio/visual /still images of the protagonists. The narratives used in the study to evoke empathy were divided into two categories: (1) compassion for physical pain (such as physical injuries caused by sports) and (2) compassion for social pain (which involved people in states of despair, social rejection, and similar difficult circumstances).

The study's findings revealed there was a difference in *time processing* between the two categories. While the human brain reacts very fast to demonstration of physical pain of others, the mental process for empathizing with psychological suffering unfolds much more slowly. Brain imaging showed that the participants needed six to eight seconds to respond to stories of social pain. However, once the emotions concerning social pain of others were awakened, their duration lasted far longer than the emotional reactions to stories about physical pain. The findings suggest that even when the stimuli are perceived simultaneously through retina and cochlea (as the narratives employed both audio and visual elements) the time needed for processing is of a critical importance.

[I]n order for emotions about psychological situations of others to be induced and experienced, additional time may be needed for the introspective processing of culturally-shaped social knowledge. The rapidity and parallel processing of attention-requiring information, which hallmark the digital age, might reduce the frequency of full experience of such emotions, with potentially negative consequences. (Immordino-Yang, McColl, A. Damasio, H. Damasio & Raichle, 2009, p. 8024)

The study data also revealed that emotions relating to the social/psychological and physical situations of others engage different neural networks. Emotions related to the psychological state of others involve the brain region that is associated with self-related/consciousness processes and with a sense of heightened awareness of one's own condition (Immordino-Yang et al., 2009).

Relating personal experiences and events outside the story to empathize with the story protagonist's difficult psychological situation was also reported in a Krasny & Sadoski (2008) study that investigated the evocation of mental imagery and affect in English/French bilingual readers in grade 11. When writing about their emotional response to the story, the students projected their personal experiences stored in their memories onto the story. For example, one student commented on a scene where the story's protagonist is lost and suffering in the wilderness with his dog, that because he loves animals, he wouldn't wish such pain upon any living creature. Krasny (2007) argues the embodied connection through the evocation of imagery and the affect in literary readings results in our empathetic identification with the characters. In sum, stories help children to gain understanding about how others feel in difficult psychological situations.

Empathic identification can also be thought of in terms of Oatley's theory (1999) of fictions as mental simulations of the social world. Keith Oatley, cognitive psychologist at the University of Toronto and researcher and writer on the psychology of emotions, argues that the cognitive mechanism by which people select goals, or form specific intentions that direct them to accomplish their plans is achieved by what he calls a "planning processor". In reading fiction, one withdraws from one's immediate world, and makes the planning processor available to the goals and actions of a protagonist. Then, in the terms of this theory, one experiences emotions as

events, and outcomes of the story actions are evaluated in relation to the protagonist's goals. However, even though the goals and plans are simulated, the readers experience the emotions as their own.

Children, similarly to adults, have the capacity for absorption in the pretend world (Harris, 2000). A University of Waterloo psychology study showed that even five-year-olds can, just as adults, construct a story in their minds and step into the minds of the story's characters (O'Neill & Shultis, 2007). In the study, the children listened to a story about a character who was in one location, but was thinking about doing something in another place. The researchers placed two models in front of the children portraying the two locations – a barn and a field. In each location, there was a cow. The children were told that the character was in the barn, but was thinking about feeding the cow in the field. Then, immediately after this sentence, the children were asked to point to the cow. The five-year-olds pointed to the cow in the location the story character was thinking about but the three-year-olds pointed to the cow in the character's physical location. The younger children were able to track the character's moves from one location to another but were unable to track a change in location if it happened only in the character's mind.

Children relate to the fictional characters in two ways; they either cast themselves into the fictional roles - become them - or they participate in the story alongside the fictional characters but retain their own identity (Coates & Coates, 2011). Similar findings came out of an earlier research study (Charles, 2009) in which I investigated whether children could liberate traditional tales from their fixed narratives and recreate them. In the oral and written recollections of their stories, children would switch into the first person's narrative, sometimes in the middle of their story. The implication is that children and adults alike have cognitive abilities to set reality aside

and take up the point of view of a protagonist situated in an imagined landscape. They both share similar emotional reactions to imaginary events, and this susceptibility to emotional engagement in imagined material appears to be characteristic of the human species throughout the life cycle.

Neurological framework. Hunte & Golembiewski (2014) explain that the brain has neurological mechanisms to process stories and uses ‘fictional worlds’ to expand understanding about the ‘real world’ because we can infer meaning from metaphors and translate scenarios from stories into our own lives. These mechanisms are located on the left and right sides of the brain in two parallel sets of organs – the two hippocampi. The right hippocampus stores and recalls the grand themes and context of the story, while the left hippocampus focuses on smaller, less abstract details. Situated alongside hippocampi are amygdalae, a pair of organs that are key processors of emotion that place the reader in the story. The right amygdalae gives the readers the contextual awareness. It allows them to think, “I’m not at risk. I’m reading a story.” At the same time, the left amygdalae locates the readers in the circumstances of the story’s protagonist, allowing them to feel as if it were them in the story. This dual knowing, “I’m in the story, yet I’m observing”, has been recognized by many thinkers, as early as Aristotle.

A study by Speer, Reynolds, Swallow & Zacks (2009) presented neuroimaging evidence that readers create vivid mental stimulations of what is described in a textual narrative while simultaneously activating brain regions that process similar experiences in real life. Different brain regions track different aspects of a story, such as a character’s physical location or current goals, and the readers’ perceptual and motor representations are actively updated in the process of comprehending narrative at points when relevant aspects of the situation are changing. The brain regions found to be associated with situation changes are connected to the hippocampi and

resemble networks of regions that have been recently associated with the act of projecting one's self into a remembered, anticipated, or imagined situation (Buckner & Carroll, 2007). Taken together, these findings affirm the idea that readers construct the simulation of the story's situations as they read the text, and that the process resembles recalling previous situations or imagining alternative ones.

However, even when we assume the protagonist's point of view in the story, we still cannot fully grasp how the other characters perceive the events and situations; our point of view is narrow. As Wilber (2000) points out, any single perspective is likely to be partial and limited; only by taking multiple perspectives and multiple contexts can knowledge quest be fruitfully advanced. To understand how others feel it is best done through storytelling activities that allow us to view a situation from a *variety of perspectives* (Morgan & Dennehy, 2004).

I suggest that while lack of interest in others may be accounted for in part by the rise in the use of information and communications technologies, ironically, technology could be helpful in addressing the problem. In this study, I investigate whether digital technology can actually be helpful in addressing children's documented lack of interest in others. Constructing multiple perspectives in hyperstories could allow students to understand how different characters view the same situations and then, as a result, perceive how unjust some attitudes can be to those who are suffering (Howell, 2009).

Narrative and "Storyworld"

Traditionally, a work is considered a narrative if it represents a series of events, which can be reconstructed in chronological order, and the events are bound together by some sense of causality (Walker, 2003). Marie-Laure Ryan (2010), a literary scholar, narratologist and writer on digital culture and new media, contends that narrative form is focused on human action, and it

is through the characters' action, rather than through the description of their thoughts or emotions, that characters reveal their state of mind. In order to understand human action, and consequently to understand plot, it is necessary to construct the mental states that motivate the characters, such as their desires, goals, beliefs, and emotions.

The process of explaining the actions of people by inferring their mental states is not unique to the understanding of characters in narrative fiction, but it is rather a fundamental operation of the human brain that allows people in real life to construct an understanding of what is going on in other people's minds (Ryan, 2010). In cognitive science, this process is referred to as "Folk Psychology". Interestingly, some literary theorists such as David Herman (2013) claim that stories teach us to perform more complex mind-reading operations than those we do in real life. In other words, reading narrative is like a mental exercise that reinforces what life teaches us, because stories, whether factual or fictional, are a representation of life. To process a story, it means that the reader has to not only construct a model of the story world but also constantly update it as the events in the story take place without losing track of what happened before. But what is meant by the "world"?

Storyworld. While "world" suggests a spatial concept, story, on the other hand, is a sequence of events that develops over time. "Storyworld" then is not a fixed space, but a dynamic one of evolving situations; it is a mental simulation of the developing plot (Ryan, 2013). My project borrowed the term storyworld for the discussion of hyperstory the students will create. Although Ryan (2013) defines storyworld as a container of various texts within a broad system of transmedia storytelling (where a story develops over many different media platforms), it seems a fitting term to use for the multi-perspective story the children will be creating with multimodal fragments, even though their hyperstory will be just a microcosm in

comparison. (To differentiate between the concepts of ‘mode’ and ‘media’, I am drawing on Kress and van Leeuwen (2011) who view modes as semiotic channels, resources for expressions, and define media as the material resources used for the production of the semiotic events.) The project’s story will be also situated in a digital realm of “interactive narratives” because it will demand that the reader (viewer/ listener /interactor) must perform physical actions (manipulating the machine) in order to access the work (Walker, 2003; Ryan, 2009).

Immersion in a storyworld. Immersion in a fictional world of a story provides the reader with pleasure. Ryan (2009) differentiates between *narrative* and *ludic* immersion. In narrative immersion, the reader engages his/her imagination in mentally constructing the storyworld. In ludic immersion, the player is deeply absorbed in the performance of a task. Ryan (2009) describes four kinds of immersion that relate to different aspects of the storyworld in the context of interactive narrative: *spatial* immersion, *epistemic* immersion, *temporal* immersion and *emotional* immersion. Even though readers may engage with all of these forms of immersion to varying degrees, two of them are particularly relevant to my project:

Epistemic immersion - the desire to know – is evident in the form of mystery story. The interactor becomes the detective and investigates the case by picking clues and extracting information from system- created characters through menu-driven dialogues. In this design, as Henry Jenkins (2004) observed, the linear narrative is embedded in an interactive game world, and allows us to reconstruct the plot through the acts of exploration and speculation. In my project, the hyperstory will be presented to the readers as a mystery to be solved - not in the sense of ‘who did it?’ but as a puzzle: What is this story about? What *really* happened there? Only by fitting together the information characters provide in their individual stories can the mystery be solved.

Emotional immersion is another aim of my project's hyperstory. As Ryan (2009) noted, combining emotional immersion with interactivity is problematic. On the one hand, the author wants to control the narrative so the story makes sense. On the other hand, the interactor wants freedom to decide how to act without imposed restrictions. The problem, sometimes called "the interactive paradox," is how to integrate the unpredictable interactor's behavior into a sequence of events that will still make for a satisfying story. Murray (1997) suggested that in interactive narrative, authorial control and reader agency must be carefully balanced.

In our everyday life, we experience two focal kinds of emotions: those directed toward ourselves, and those directed towards others, known as empathy (Ryan, 2009). Self-directed emotions concern our desires and our actions to realize them. In contrast, empathy can be only achieved by putting ourselves into the situation of others, by pretending to be them, and imagining their desires as our own. When playing games, the emotions experienced such as excitement, triumph, frustration or amusement are predominantly self-directed ones; they reflect the success or failure in achieving the goal of the game. On the other hand, narrative has a power to produce emotions directed towards others. For example, Greek tragedy was often described as producing *catharsis* in the spectators, that is providing release from repressed emotions. To put it in another way, in narrative, characters are regarded as persons, while in computer games characters are regarded as a means to an end (Ryan, 2009).

In constructing the project's hyperstory, inventing the characters' individual storylines and telling them in the first person should allow for the identification with the "other" and thus result in emotional immersion of the creator.

Learning in a storyworld. Constructing a storyworld and creating hyperlinks to the story's narrative paths may provide additional learning benefits for the students. "Stories help us

remember” (Ohler, 2008, p. 9). This is particularly important now because we need to navigate and coordinate the immense amount of information available to us. As Ohler (2008) argues, story form content engages us on an emotional level because it provides context and allows for meaning while the same content set with a logical task-oriented framework does not. In my earlier research study (Charles, 2006; 2009) children wove bits and pieces of what they knew, including facts they studied in the curriculum into their invented stories. In their recollections of stories, they were able to remember those facts as long as one month later. It seems to follow then, that attaching facts and ideas to the project’s hyperstory, would help students to retain those facts in memory and to retrieve them easily.

Liston (1994), in providing the neurophilosophical perspective of story-telling and narrative, draws on work of Laughlin, McManus, and d’Aquili (1990) to argue that learning is the activity of forming novel associative neural alignments and adapting these new relationships. The brain is structured to detect patterns and there is an underlying impulse to take in information in symbolic form. Neurognosis, a theory of neural networking based in a “biogenetic structuralism”, shows that “neurons tend to form clusters or linkages with other neurons in neural networks and prefer association with these familiar neurons over unfamiliar neurons” (p. 6). This implies that “unless and until we relate new information to pre-existing student interest and knowledge, there will be no point of entry; no previously established neural network onto which students can connect or “hang” new extensions” (p. 8). The previously unconnected neurons can meet for an instant, but their connection will be short-lived.

Creating hyperstory could encourage new neural connections, the recognition of new patterns, relationships among objects and ideas and help to store the newly acquired information into students’ long-term memory.

Hypertext Formats

Hyper literature is being regarded as the literature of the future (Walker, 2005; Landow, 2006). But how does one write about a future that has not happened yet? I suppose the best one can do is to research the present, or ‘now,’ as it is unfolding. As a writer, I find the concept of hyper narrative exciting: a mysterious continent, a place to explore. This place exerts a magnetic force on me; I want to know: How do you move in that place? Where can you go? What will you discover; and how will you understand it? Before exploring these ideas, however, I will try to clarify some definitions.

What is hypertext? What are its characteristics? The term ‘hypertext’ was coined by Ted Nelson in 1965 (Felker, 2002). The prefix ‘hyper’ comes from Greek and means “over”, “above” or “beyond” and signifies the overcoming linear constraints of written text. Hypertext can be defined as “Electronic text that contains hyperlinks – words or images that when clicked on lead to other documents or parts of documents” (Murray, 2012, p. 424).

Hypermedia, on the other hand, is defined as “a collection of text, sound, video, and/or images, linked electronically to one another (and possibly to other hypermedia), and designed to be entered at any point and experienced non-sequentially” (Felker, 2002, p. 326). Bolter (2001) argues that digital technology has allowed writing to be reconfigured by adding interactivity, multi-layering, non-linear sequencing and multimedia elements such as animation and sound, to be all part of storytelling in the new writing space. As hypermedia is by its nature hypertextual and hypertext has now absorbed multimodal expressions, the distinction between hypertext and hypermedia seems to have been erased.

Landow (2006) describes hypertextuality as texts that provide multiple beginnings and endings rather than single ones. Since hypertext has no real center, beginning or end, it is not

really possible to tell where a particular text begins or ends. Roland Barthes (1979) describes this as an ideal text, a galaxy of signifiers, not as a structure of signifieds because it can be accessed by several entrances, none of which can be authoritatively declared as the main one. It also suggests that everything in a hypertext is equally important. Which text is primary? Which one is the secondary one? Who is the protagonist? Who are the secondary characters? The reader has to decide. This, to me, seems like a true democratization of the story's characters. They *all* have their story to tell. This hypertext feature - the provision of an opportunity to decide which character to trust or believe - is empowering. The reader will make up his/her mind in the end as to whose story he/she wants to believe, thus validating the reader.

Espen Aarseth (1997), scholar in the fields of video games studies, hypertext and new media, makes a distinction between the printed book and hypertext in the following way: In a printed book, the author takes the reader by the hand and leads her through the story's journey. The author determines what the reader will read and in what order. A reader of a traditional literary text is powerless. Like a passenger on a train, the reader can observe the shifting landscape, contemplate, even step off, but is not free to move the tracks in a different direction. "The reader's pleasure is the pleasure of the voyeur" (p. 4).

Aarseth (1997) suggests that hypertext is not a reconfiguration of narrative but offers different readings of it. Each reading path may be different and consequently, as Bolter (2001) contends, hypertext story as structure can embrace contradictory emotional and perhaps factual outcomes. When different characters' voices describe the same event from their own points of view as will be the case in my proposed project's story, the characters' versions may be coloured by their personalities and their roles and positions within the story.

Hypertext navigation. The spatial design of hypertext imitates the process of mapping (Papson, Goldman & Kersey, 2007). The hypertext navigation system functions as a cognitive map. The design of the interface *is* the narrative as it contains all the signifying elements - words, shapes, images, colours and the visibility of hyperlinks. Thus, the fundamental processes to constructing or interpreting hypertext are navigational (Papson, et al., 2007). The website 'pages' should be viewed 'as canvases' and as a set of visual relationships. In contrast to written text, the website pages demand different decoding and encoding processes. Hypertext can also be viewed as a form of collage. It enables us to gather random images, audio-video clips, print or handwritten text, and so forth, and then reassemble these elements to create associations.

Since a hypertext has no real center, fixed beginning or end, a hypertext resembles associative thinking more than reading or writing (Felker, 2002). In this way, hyper narrative form seems to me much truer to life. It mirrors natural conversation - going back and forth, connecting ideas, bringing in fragments of associations, extending what the other person said and so on. One imminent danger is that one can get lost and forget the main thread of the conversation.

We face the same danger when searching for specific information on the Internet: something else may catch our attention on a page, we click on the link, and before we realize it, we get further and further from the purpose of the original search. It takes a conscious effort and discipline on our part to remain focused because the natural tendency of the human brain is to wander to ever-new things. As soon as nothing new can be observed about an object, the attention will shift to somewhere else (Carr, 2011). If we want to keep it upon the one and the same object, we must seek constantly to find something new about it, particularly if there are other objects of interest drawing us away from it (Mangen, 2008).

Studies indicate that reading on a screen not only requires different reading strategies than reading traditional print, but also that the evolution of new reading and writing modalities on the Web are changing our brain functions (Hayles, 2010).

Brief history of hypertext. Hypertext was not born in the age of the Internet. Non-linear texts predate the printing press, going back all the way to the Middle Ages. For example, Gospel manuscripts were marked by a running series of marginal numbers so the students of the gospels could enter them in non-sequential order to locate passages of the related stories (O'Donnel, 1998). By extension then, all the reference works, such as dictionaries and encyclopedias, could be viewed as early hypertexts. Before the printing press, the line between readers and writers was blurred in a similar way as they are in hypertext. When books were copied by hand, the scribes would often add to or modify what they copied. It was the invention of the mass-produced book that made it possible for our current authority of the author to develop (O'Donnel, 1998).

In the late sixties, post-structural critics and philosophers such as Barthes, Foucault, Derrida, and Kristeva strove to extend the boundaries beyond the traditional texts, and tried to demonstrate that “texts are not isolated islands of meaning but ongoing dialogues of repetition, mutation, and recombination of signs” (Aarseth, 1997, p. 83). Postmodern theorists, such as Lyotard and Baudrillard, stressed the fragmented nature of knowledge created by the rise of electronic communications. Hypertext theory draws heavily on the emphasis of fragmentation and indeterminacy found in postmodernism.

In the late eighties and early nineties, most hypertext fiction was composed just in words, with links. Images were used to some extent in works like *Victory Garden* (Moulthorp, 1991) and *Patchwork Girl* (Shelley Jackson, 1995). But after the World Wide Web was released by Sir

Tim Berners-Lee in 1991, the hypertext fiction really took off. Now not only are still images but also the addition of sound clips, videos, and animations are increasingly common. Digital media enabled once separate forms of literature, art, photography, drama, games, film, television and comics to converge (Bolter & Grusin, 2002) and it seems incomplete to view them apart now. Consequently, as Bolter (2001) pointed out, “digital technology is turning out to be one of the most traumatic remediations in history of Western writing” (p. 24).

To summarize, there are three major changes that hypertext brought forth with regards to the Western literary tradition: (1) a directional shift from singular and linear to multilinear and nonlinear; (2) a textual shift from written to visual and aural (privileging the visual in particular); and (3) a relational shift from author to reader. Ultimately, as Aarseth (1997) argued, the balance of power in the author-reader relationship is not a choice between paper and electronic text, linear or nonlinear text, or open or closed text, but whether the user has the ability to transform the text into something of his or her own.

Hypertext as playground. Aarseth (1997) insisted that there is a play dimension in both hypertext and videogames. Both hypertext fiction and digital gaming combine stories and play, narrative with gaming, and provide user-centered experience, requiring readers to choose their own pathways through. The hypertext reader *is* a player and the hypertext *is* a narrative game; it is possible to explore, get lost and discover different paths and meanings through the topological structures of the hypertext. The difference between narratives and games is not clear-cut, but there is significant overlap between the two.

What interests me is the *play* element contained within the creation of hypertext. What is the state of mind of the creator as he/she is composing the fragments that will lay out the story’s

pathways? If we consider that both play and games have rules, what is the difference between them?

Gonzalo Frasca (1999), a game designer and video games theorist, suggests the answer by using philosopher André Lalande's two definitions of "jeu" in *Dictionnaire Philosophique*. While in the English language we have two words for the activities – play and game, in French there exists only one word that refers to both. Lalande (1928) proposed two meanings for the word "jeu" and differentiates between them not because of the activities' rules but by their outcome. Games have a result: they define a winner and a loser; play does not. French sociologist, Roger Caillois (1967) suggested a term "paidea", as a counterpart to English word "play" and "ludus" for the word "game". Paidea is a physical or mental activity which has no immediate useful objective, nor defined objective, and whose only reason is based in the pleasure experienced by the player. Ludus is a particular kind of paidea, defined as an "activity organized under a system of rules that defines a victory or a defeat, a gain or a loss" (Frasca, 1999, p. 5). Examples of ludus in video games are adventure games such as Pac-man, Mario Bros., and Myst. While ludus can be related to *narrative sequence* - beginning, development and result (triumph or defeat), paidea can be related to *narrative setting* (Frasca, 1999). Paidea's activities are determined by the environment and the actions. Examples of the paidea are Multi-user domain (*MUD*) or *object oriented (MOO)* virtual reality systems games in which many users are connected and play simultaneously at one time. MUD players do not usually want to tell a story, they want to be engaged in the activities and set their own goals.

Aarseth (1997) ascribes the similarities between games and narratives to a common inspiration from life. But whereas narrative relates to life as representation, games relate to it as simulation (Ryan, 2004). Narrative looks backward and gives meaning to events from the

perspective of their outcome; its purpose is to tell us what happened. In contrast, gaming is oriented forward and it is performative (Ryan, 2004). At the moment of play, meaning is suspended, and will only become available when the player achieves the goal. But does not the same thing happen in hyper-narrative? Only after the reader puts together the fragments of the story, assembles them like in jigsaw puzzles, does s/he discover the story's meaning.

Hypertext form is also performative and allows for composition as dramatic, symbolic play (Rouzie, 2000). Play, as anthropologist Dwight Conquergood wrote in 1998, is linked to improvisation, innovation, experimentation, and reflection.

[A] playful impulse promotes a radical self-questioning critique that yields a deeper self-knowledge, the first step towards transformation... The metacommunicative signal "this is play" temporarily releases, but does not disconnect us from workday realities and responsibilities and opens up a privileged space for sheer deconstruction and reconstruction. (Conquergood, 1989, p. 83)

Many scholars have noted the transformational nature of play. For instance, Daiute (1989) contends that when children play, they construct microworlds in which it is safe to explore unfamiliar or dangerous issues. Older children reduce anxiety about making mistakes on new academic material when using this material in play. In other words, play has been linked to the elaboration of feelings and thoughts, the construction of new ideas and feelings, and the reduction of anxiety.

In hypertext, a play or "game of narration," takes place in what Rebecca Luce-Kapler (2006) calls a subjunctive space open to exploration. Similarly, Murray (1997), theorist of digital media, describes computer-mediated communication as an invitation to enter into another realm, a place of enchantment. Linking the word 'enchantment' with computer usage rather

surprised me, as I am accustomed to associating enchantment with fairy tales. However, as Murray explains, in psychological terms, computers are ‘transitional objects’, located on the threshold between external reality and our own minds. We can gain some understanding about the space between the external world and internal reality from the insights of child psychiatrist D. W. Winnicott.

Winnicott (1971) refers to this other realm as an ‘intermediary space’ a potential site where symbolic relation takes place, and which is characterized by a sense of the presence or proximity of another. For example, a blanket could be a transitional object for a small child and provide a comfort because the child can project upon it both her memories of the mother (who may not be available at the moment) and her sense of herself as being cuddled. But the blanket is also a physical object outside of the child’s imagination. Narrative, children’s pretend play or other sustained make-believe experiences that evoke magical feelings, are also ‘transitional objects’ because they are giving us something safely outside of ourselves upon which we can project our feelings. The power of this magical feeling, which Winnicott calls ‘transitional’ experience, comes from the fact of knowing that “the real thing is the thing that isn’t there.” While playing in this ‘intermediate space’ one can learn, see anew, and adapt to external reality.

Play is then a form of moving through space in this other, ‘intermediary’ universe. This ‘space you cannot define but you know it is there,’ is the space that I consider to be a playground for the imagination, a playground for composing a story, where one can freely move, going back and forth like in a conversation, where meaning arises from the juxtaposition of images and from their associative, referential and representational connections. I am anticipating that it is in this ‘intermediary playground’ where the children will be creating the world of their hyperstory. It is within this container of Luce-Kapler’s “subjunctive space” or Conquergood’s “privileged space

for sheer deconstruction and reconstruction” of hypertext form where it is possible to play and to create multiple points of view of the story’s characters, and use hyperlinks to show the characters’ complexities.

Hypertext narrative. Hyper-narrative, in order to work, needs to reveal a story. Regardless which links the reader follows, or in which order the sections of ‘text’ are viewed or read, the story has to emerge, which is then the source of the reader’s satisfaction. Human thinking may well be associative, but narrative is an ordered representation of life. Peter Brooks (1984), interdisciplinary scholar of literature and psychoanalysis at Yale University, argues that there is an essential human need for narrative order, meaning and completion. We read for plot, because its basic mechanism duplicates the dynamics of the psyche. “Until such a time as we cease to exchange understandings in the form of stories, we will need to remain dependent on the logic we use to shape and understand stories, which is to say, dependent on plot” (p. 7). Brooks insists that even in postmodernity, plot elements must survive in one form or another because narrative plot is “the product of our refusal to allow temporality to be meaningless, our stubborn insistence on making meaning in the world and in our lives” (p. 323).

In narrative, as Vladimir Propp (1968) has shown, the characters’ actions are products of their roles within the story as a whole. The characters’ actions are motivated by their mental states, their desires and goals. Once the story character decides to take action to solve a problem, the course of the story is set whether the action results in success or failure. A complete departure from such an order creates confusion and an obstacle to reading for pleasure (Miall & Dobson, 2001; Ryan 2004; Pope, 2010; 2013). While hyper-narrative may allow for divergent thinking and imaginative exploration, nevertheless it would appear that readers still want a

traditional reading pleasure. Consequently, the hyper narrative's events must all add up to a coherent sequence in order to make sense.

A story may be best envisioned as “beads on a string”, strung events in a linear narrative, but this string-of-beads model can be broken by adding flashbacks, notes, documents, and conversation to provide pieces of the “puzzle” (Alexander, 2011). In my project, the story characters' pathways *will* be constructed in a logical sequential order to make sense, but there will be links to various drawn images, photographs of objects and videos that the children will create as building blocks for the “world” of their story.

Multimodal Storytelling

A National Council of Teachers of English declaration concerning the unique capacities and challenges of digital forms, states that, “There are increased cognitive demands on the audience to interpret the intertextuality of communication events that include combinations of print, speech, images, movement, music, and animation. Products may blur traditional lines of genre, author/audience, and linear sequence” (NCTE, 2005, p. 2). This means that skills, approaches toward media literacy, visual and aural rhetoric, and critical literacy should be taught in English/Language Arts classrooms.

While multimodal storytelling seems to be regarded by many as something new and revolutionary, telling stories through different media and through their combinations goes way back in history. We can trace the evidence to cave paintings from the Paleolithic age and the dissemination of Greek myth through various artistic media such as sculpture, architecture and drama. In the Middle Ages, there were multiple modes of distribution of Biblical stories. These stories were written on parchment and adorned with imagery, portrayed in stained-glass windows, enacted out in passion plays, and even inspired the interactive phenomenon of the

Stations of the Cross, where pilgrims relived the passion of Christ by following a fixed route marked with little chapels (Ryan, 2013).

Narratology, the formal theory of narrative, transcended disciplines and media from its earliest days. Claude Bremond (1964), who continued the work of Vladimir Propp, argued that [Narrative is] independent of the techniques that bear it along. It may be transposed from one to another medium without losing its essential properties... a novel can be transposed to a stage or screen, one can recount in words a film to someone who has not seen it. These are words we read, images we see, gestures we decipher, but through them, it is a story that we follow; and this can be the same story. (Bremond, 1964, p. 4)

However, the medium matters for the type of meaning that can be encoded because media differ in their efficiency and expressive power. The term, “affordancies,” is often used to describe media constraints and possibilities.

In *A Pedagogy of Multiliteracies: Designing Social Futures* (The New London Group, 1996) six design elements by which meaning is constructed were identified: linguistic design, visual design, audio design, gestural design, spatial design, and multimodal design, which combines and interconnects all of the above. The multimodal mode of meanings is the most significant, as it relates all the other modes in dynamic relationships. “Intertextuality”, a term coined by poststructuralist philosopher Julie Kristeva in 1966, expresses the complex ways in which the meaning of a text (such as its linguistic meaning) can be changed by its relationships to other texts and other modes of meaning: for example, visual design, or geographical positioning (The New London Group, 1996). In contrast, “intermediality” can be described as “intermodal relations in media” or “media intermultimodality” (Elleström, 2010). In other words, intermediality can be perceived as a bridge, or space in between, where traditionally

separate art forms meet, merge and cross over to each other's territory by means of different digital media and stage new relationships in between the media and the art form practices.

This combining of modes, or multimodality, has often been described in weaving metaphors. Haggerty and Mitchell (2010) compare it to a 'woven mat' and offer other examples: Mitchell (2004) uses the term 'braiding'; Chandler (2002) defines it as an 'assemblage of signs'; Leland and Harste (1994) talk of 'orchestration'; and Kress and Van Leeuwen (2001) refer to 'multimodal ensembles' (p. 329).

Lars Elleström (2010) classified media concepts into three analytical categories: (1) 'basic media' (such as 'auditory text', 'tactile text,' 'still image,' 'moving images,' 'iconic body performance', and 'organized nonverbal sound'); (2) 'qualified media' defined in term of origins and use (film, dance, photography, painting, and presumably computer games); (3) 'technical media,' which 'realize' or 'display' basic and qualified media categories (for example, the screen of a TV, certain paper for photography and another kind for text, and the human body for dance). Elleström also proposed to describe every medium in terms of four 'modalities' corresponding to their classes of properties: material modality (human body, paper, clay, silicon and electric pulses, etc.), sensorial modality (seeing, hearing, feeling, tasting and smelling), spatiotemporal modality (extending in space, in time, or in both), and semiotic modality (convention, resemblance, contiguity). Ryan (2014) proposes to put these modalities under one semiotic category because they all concern the basic properties of signs.

While the term intermediality refers to new relationships *between* the media and the separate art form practices (Ellestrom, 2010), the term "transmediality" refers to the transfer *across* media, from one medium to another (Semali, 2002). For instance, a book can be transposed into a film, a song to a video, etc. In transmediality, meaning is carried from one sign

system to another, and this act of transposing generates opportunity for reflection (Miller & McVee (2012).

So, what *is* new about multimodal storytelling is its theorizing, triggered by changing practices in communication brought forth by the arrival of digital technology, and the urgency to integrate these practices into the school system. In the past decade, multimodal literacies came to the forefront of theoretical scholarship in education. The NCTE, National Council of Teachers of English, declared that, “The use of different modes of expression in student work should be integrated into the overall literacy goals of the curriculum...” (NCTE, 2005, p. 1). Miller and McVee (2012) argue that the embodied learning through students’ use of multimodalities is the essential educational focus in the digital world.

However, the integration of multimodal composing into an educational practice is a complex process. The educational system is deeply rooted in the Industrial age. Incorporating multimodal literacies means a holistic approach to education, with a focus on individuals’ strengths, allowing each student freedom of expression of his/her particular intelligences.

Creativity

“Education systems around the world are ‘educating people out of their creative capacities’ with devastating effects. Creativity breeds innovation and without innovation there is no hope for progression. Sir Ken [Robinson] describes creativity as ‘important in education as literacy’. It is up to us as educators to implement change.”

(The 2011 Inspired Impact Teachers’ Conference, p. 7, Massey University:

Palmerston North: NZ)

The *Penguin Dictionary of Psychology* (2009) defines creativity as “mental processes that lead to solutions, ideas, conceptualization, artistic forms, theories or products that are

unique, novel, appropriate and useful” (Reber et al., p. 179). Over the centuries, creativity has been viewed as a medium for beautifying the environment, a form of self-expression or a way of understanding and coping with something previously unknown (Cropley, 2001). Until the modern scientific era, creativity was attributed to heavenly force; Plato (427-327 BCE) argued that the poet was possessed by divine inspiration (Sawyer, 2006). Throughout the ages, artists have been thought of as craftsmen, or as inspired geniuses, and conceptions of creativity have swung between rational and Romantic. While rationalist belief held that creativity was generated by the conscious, deliberating and rational mind, Romantic belief was centered in the natural world (Robinson, 2011) and claimed that creativity sprang from an irrational unconscious (Sawyer, 2006).

Looking back, we can see that the changing conceptions of creativity were not random but that they were socially constructed. They were the results of technologies of the time, knowledge about these and social values and mores of particular eras (Sawyer, 2006). In sum, creativity is always a product of its time. The social setting of each era determines what new ideas emerge by guiding creative thinking into particular channels and affecting motivation. In a practical sense, new technologies present fresh possibilities for creative work, and the creative use of technologies leads to the evolution and often transformation of technologies (Robinson, 2011). So, have there been changes in young people’s creativity since the arrival of digital technologies?

Perhaps the most widely used test to measure creativity is the *Torrance Tests of Creative Thinking* (TTCT). Developed in 1966, the TTCT is used worldwide in both the educational and the corporate world and has been found to predict creative achievement better than other measures of creative thinking (Kim, 2008a). The TTCT has two versions, The TTCT-Verbal and

the TTCT-Figural, and they measure several dimensions of creative potential, such as open-mindedness, intellectual curiosity, originality and verbal expressiveness. Both TTCT versions consist of two parallel forms, Form A and Form B, each requiring 30 minutes to complete.

In a recent study (Kim, 2011), samples from the *Torrance Tests of Creative Thinking* (TTCT) of 272, 599 North American children and adults were used to investigate whether creativity has changed over the past few decades. The study examined the TTCT-Figural data scores from years 1974, 1984, 1990, 1998 and 2008, which were obtained through the Scholastic Testing Services, Inc. The analysis of the documents showed significant decline in creative thinking across all areas of the TTCT. The largest decrease was seen in scores on *elaboration*, which is children's ability to elaborate on ideas and engage in detailed and reflective thinking. Declines were also found in scores on *originality* (the ability to produce unique and unusual ideas); *fluency* (the ability to generate many ideas); *abstractness of titles* (the children's ability for synthesis and for capturing the essence of the information involved); and *resistance to premature closure* (the ability to be intellectually curious and open-minded). Particularly relevant to my proposed project, the study documented a significant drop in scores on *creative strengths*, which indicate that, "children have become less emotionally expressive... less perceptive... and less likely to see things from a different angle" (p. 292). The decrease was steepest in more recent years, from 1998 to 2008, and the scores of children from kindergarten to grade six declined more than those of other age groups. Interestingly, the decrease in creative thinking parallels the increase in IQs scores (Flynn, 2007) and increases in the average scores on the Scholastic Assessment Test (SAT) (College Entrance Board, 2008). So why is it that the children are getting more intelligent but less creative? What causes such discrepancy?

The role of cognition in creativity. Arthur J. Cropley (2001), educational psychologist, researcher and writer on creativity, contends that cognitive structures are internal representations of the external world such as patterns and categories that are built up on the basis of the information received from the outside and are stored in memory. They are built up on the basis of the accumulated experience of the whole society, passed on mainly by means of language by parents, teachers, books, media and other sources of information. These conventional cognitive structures make it possible to perceive the world as systematic and largely understandable rather than as chaotic and are useful in dealing with everyday life and for social survival. To produce novelty, certain cognitive processes are necessary: Selecting from the information available and already stored in mind; relating new information to what is already known; combining elements of new and old information; evaluating newly emerging combinations and selecting the successful ones. Similarly, Torrance (1970) argued that creative thinking involves uniting disparate ideas by putting them into a common context; being able to imagine almost anything; and enriching one's own thinking through the application of fantasy.

Convergent and *divergent* thinking, terms coined by psychologist J. P. Guilford in 1950, can be equated with Piaget's processes of assimilation and accommodation. Convergent thinking is oriented towards deriving the single correct answer to a given question and puts emphasis on accuracy but it focuses on recognizing the familiar, reapplying set techniques and preserving the already known. Convergent thinking is equated with intelligence but it does not produce novelty (Cropley, 2001). Divergent thinking involves processes like shifting perspectives, transforming, or producing multiple answers from the available information. Divergent thinking produces variability and is seen as the cognitive base of creativity (Cropley, 2001). This does not mean that intellect and reason are separated and insulated from each other.

All areas in the brain are connected through neural circuitry and there is a continual dance among them (Robinson, 2011).

Lubart & Lautrey (1996) proposed that the development of logical thinking and reasoning ability might be related to losing creative thinking. As Piaget (1962) stated, the assimilation process in a spontaneity state is creative imagination, and creative imagination does not decrease with age. However, as creative imagination is integrated and reintegrated in intelligence, due to the accommodation process, creative imagination is compromised.

While assimilation and accommodation are valid concepts to consider with multimodal engagement, Piaget's adherence to developmental stages comes under critique as being too rigidly defined. His theory seemed to depend too much on logic as both a framework for describing cognitive structures and as a perfect state toward which development was supposed to be aimed. Areas of children's development that were not centrally logical, such as art, music and drama, seemed to be beyond the scope of his theory (Gardner, 1982; Feldman, 2004).

In a digital world, children have more opportunities than ever to access and gather information and facts. But to be creative, they also need to be provided with opportunities and time to reflect upon those things they gathered. The discrepancy between the rising of IQ tests and SAT scores and documented decline of creative thinking could be in part explained by the presence of too many facts and no time to think about them, and play with them.

Technological devices could be another contributing factor to the decrease in creative thinking. Children spend increasing amounts of time interacting with electronic entertainment devices. They may be engaged, interacting with a game but they are still playing in someone else's universe that is created by adult designers. Researchers express concerns that, if the play

material defines the parameters of an interaction, children do not have the opportunity to create and define the interaction themselves (Oravec, 2000).

A number of works on traditional and digital storytelling have identified creativity as an essential constituent of storytelling (Jacobs & Tunnell, 2004). Children can create widely different stories using the same communication media, narrative components, or linguistic structure, as I have demonstrated in my previous research (Charles, 2009). In my proposed project it will be children, collectively, who will be the creators of their story and the elements of the story's world. The creativity factor will be a significant part of my proposed project. Even though the project is enabled by digital technology, *the focus will be on the children's work*, the multimodal fragments the children will produce, *not on the use of digital tools*.

Apps are useful tools for the creative process but they do not make a person creative. Many of the apps seem to me like eyeglasses: If you have poor vision, they will help you to see better; but glasses by themselves will not see anything. Or, as Jason Ohler (2008) puts it, "Digital technology is assistive technology for the artistically challenged" (p. 4). The apps may enhance and speed modal 'expressions' but at the same time their algorithmic lock-in programming may limit the user's creativity (Lanier, 2010). Some aspects of technologies may even hinder the development of a child's creative personality (Kim, 2011; Gardner & Davis, 2013).

The philosophers of the past did not concern themselves with technology for its own sake: what kind of parchment, paper or pens the work was made with. Their concern was with the content of the work, and what it expressed about our psyche, perception, and knowledge. But we do know now that as humans shape their technology, the technology in turn shapes them, and influences how they think and act.

In 1882, philosopher Friedrich Nietzsche switched from writing on paper to writing on a typewriter. One of his friends, composer Heinrich Koselitz, noticed a change in Nietzsche's style of prose. Koselitz wrote about his observation to Nietzsche and in a letter, he commented on his own work:

“my ‘thoughts’ in music and language often depend on the quality of pen and paper.”

“You are right,” Nietzsche replied. “Our writing equipment takes part in the forming of our thoughts.” (Carr, 2011, p. 18-19)

My interest lies in finding how contemporary children born in a technological world transfer their thinking into their creative expressions. As psychologist Ageliki Nicolopoulou (1997) suggests, *children's storytelling must be approached as a form of symbolic action*. The present study aims to understand what children *do* with narrative and how they *use* it to represent the world to themselves and to each other.

Case Studies in Education

Multiple perspectives case studies. The studies surveyed look into how children comprehend characters' perspectives within existing stories they read. The present study, in contrast, focuses on how children *create* characters' points of view themselves (rather than how they assume various characters' perspectives as readers).

Emery and Milhalevich's study (1992) with grades four, five and six students investigated the effects of directed discussion of character perspectives on children's ability to infer character motives, thoughts and feelings in new stories. The study's findings showed that many children might benefit from being directed to consider more than one character's perspective in stories and that such direction improves children's ability in making inferences. Researchers note that more field-testing of character perspective is needed in order to help

“children grow in their ability to interpret literature, and perhaps life as well” (Emery & Milhalevich, 1992, p. 58).

In Emery’s subsequent study (1996), students discussed characters’ perspectives in a fiction story for children, chosen by the researcher. Understanding story characters is essential for comprehension of the story because, as Emery (1996) argues, characters’ desires, feelings and thoughts are the glue that tie the actions of the story together. Story maps were used in the study because they are effective for improving narrative comprehension, providing concreteness, attention to structural details, visual memorability and the opportunity for active engagement (Fitzgerald & Spiegel, 1983; Baumann & Bergeron, 1993). My own work (Charles, 2009) with using ‘symbol maps’ as scaffolding for creating stories with children can certainly confirm these researchers’ findings.

Emery (1996) notes that it is important that students engage in a discussion of the characters’ perspectives during the main story events listed on their maps. By relating the characters’ perspectives to the story events, readers are making the causal connection that ties these events together and understands the story as a whole. In my proposed study, as I visualize it, readers would be able to navigate between the characters’ perspectives by clicking on an event symbol on the screen menu, and then by clicking on the characters’ symbols to navigate between them. The reader would not just be able to read the character’s words, but also see images and embedded videos of how the character views the situation.

Building on Emery’s study, Clyde (2003) argues that combining careful “reading” of illustrations in children’s picture books with the use of drama to imagine the characters’ thoughts successfully engages readers to empathize with characters and understand perspectives different from their own. (This is the approach I will be taking in my project – writing from the

characters' points of view, that is, 'stepping into their mindset'.) By moving from observing the characters in the story into "being" those characters through role-playing, students were able to verbalize what was going through the characters' minds because they could connect them to their own life experiences. Clyde found that this strategy worked regardless of the students' age: even 6-year-olds cared deeply about characters' emotions and appreciated others' feelings and circumstances.

If children are invited to examine the lives of others, trying them on for fit, looking around inside the story world, feeling the feelings of characters with life experiences different from their own, it's just possible that they might become kinder, more compassionate adults, able to empathize with and appreciate the perspectives of others whose lives at first glance seem incomprehensible. (Clyde, 2003, p. 159)

Koss (2009) explored the growing trend of young adult literature with multiple perspectives, and proposed two practical thematic units for the English classroom. Although the units are meant for high school students reading YA novels, they are relevant to my project as well. The lessons rely on social constructivist and sociocultural learning theories that emphasize the value of students working together to form meaning and engaging students with alternative perspectives portrayed in literature. For instance, in one thematic unit students explore the viewpoints of different characters in a story, asking questions such as: Why did the characters act as they did? Are there discrepancies between what the characters tell about the events in the story? What might have caused those discrepancies?

While in the previously discussed study by Emery (1996) it was a teacher who asked questions to prompt a discussion with students, Koss (2009) goes further, suggesting that the questions should be discussed collectively in students' groups. In my project, I intend to go

further still by having the students, in characters they devise, converse with and question the other characters themselves.

Hypertext case studies in education. Luce-Kapler's study (2007) looked at six-grade students' use of digital technology in developing hypertexts in response to postmodern picture books. The study's focus was on a text's construction (not on the text content), that is, on changing forms and formats, one of the characteristics of Dresang's (1999) *Radical Change* text. The inquiry was whether the exposure to these different forms of picture books and experience with *wiki* software writing would encourage students' collaborative work, and whether they could use similar narrative forms and hyperlinks in their own writing. (*Wiki* is an open software program that allows users to access and edit the pages on an ongoing basis.)

The study describes that while students had difficulties grasping how making links to their classmates' texts could extend the possibilities of their own, there was other learning taking place instead which was not a focus of the study. The students were gaining visual literacy skills because they were more interested in visuals. Finding images on Google seemed to be most exciting, particularly if the images were animated. Luce-Kapler (2007) suggests that by giving up some of the teacher's control and allowing ideas to emerge from the group of students, richer experience was the result. She also emphasizes the importance of focusing events (in this case, they were picture books), interacting in groups and allowing for play opportunities.

Two of these points, the importance of focusing events and allowing for play opportunities, also came up in Daiute's study from 1989, "Play as thought: Thinking strategies of young writers":

Another important factor in setting the stage for play is to suggest concrete tasks involving elements that children can manipulate, such as specific words or scenarios.

Such structure in the task provides a focal point for play and thought, and a jumping-off point for the children's creation of a simulated world or drama. (Daiute, 1989, p. 20)

Daiute also recommended providing young writers with a general narrative structure that suggests settings, character types, and some details, while challenging them to expand on the ideas as they wish:

Just as toys can serve as catalysts for play and eventually become symbols for larger ideas, concrete tasks can provide the basis for the abstract thought that children create through play. (Daiute, 1989, p. 20)

In my proposed project, the children-created base storyline will be this general structure, or catalyst for a construction of hyperlinks in building the storyworld.

Luce-Kapler and Dobson's study (2005) investigated the reading and writing of hyperfiction with undergraduate students. The students used two forms of software- *wikis* and *Storyspace*. The data from the study showed that undergraduate students had difficulty creating meaning in the 'hyperfiction' since, as writers and readers, they had come to understand such a process from their familiarity with print and narrative. The researchers conclude that new skills need to be developed and taught to read and write e-literature.

Writers of hyperfiction need to conceive of their text as a structure of possible structures. In both writing and reading, it needs to be understood that hyperfiction is not narrative as we generally understand it (Bolter, 2001). Instead, it is as Barthes (1979) describes, a network, where the governing logic consists of associations, contiguities, and cross-references that liberate what Barthes calls "symbolic energy." Barthes offers a poetic description of this "ideal text" about which he has written before hyperfiction came into being:

The reader of the Text could be compared to an idle subject (a subject having relaxed his “imaginary”): this fairly empty subject strolls along the side of the valley... What he sees is multiple and irreducible; it emerges from substances and levels that are heterogeneous and disconnected: lights, colors, vegetation, heat, air, bursts of noise, high-pitched bird calls, children’s cries from the other side of the valley, paths, gestures, clothing of close and distant inhabitants. All these *occurrences* are partly identifiable: they proceed from known codes, but their combination is unique, founding the stroll in difference that can be repeated only as difference. (Barthes, 1979, pp. 76-77)

This quotation seems to me almost a prophetic description of hypermedia fiction.

Barthes could envision (well, feel in his senses) what the hyper literature’s effect could produce in readers.

Personally, I do not see the “text” as a valley but rather as a 3D architectural structure, a building with many floors. This is not an ordinary building as we know it. It looks more like something architect Frank Gehry would design- an organic structure with protrusions and jutting terraces. While Barthes’s “text” is an open valley, I see the hyper-narrative building structure as somewhat contained, a storyworld with its own rules and regulations, even though the movement within may be unlimited and multidirectional. Initially, I conceived of the story structure in my project as a web or molecule with radiating links. But now, after doing a lot of reading and thinking, this abstraction is taking a shape.

The reader enters the building. There is no elevator to take her up. That is, there is no narrator in the story. The elevator is under construction by the reader. But there are several staircases belonging to the characters of the story: characters live in this building. Those characters meet occasionally on the same floors that are the main events, or scenes of the story.

The reader can choose whichever staircase to go up. When the reader walks up to the next floor, she can inspect what is there: enter rooms, see what objects, desires and memories the characters brought to the floor and stored in the rooms. Perhaps the reader wants to take a different staircase to the next floor? No problem. She may walk up to the next level using a different staircase but still, she progresses sequentially in a story, all the way up to the top of the building. There she pauses, looks around, and thinks: Oh, so this is the place! Then she goes down, taking her own elevator. She knows what the story is all about.

What strikes me as strange, is that I am mentally moving in this narrative building's structure up and down (am I scrolling like when reading a text on the screen?) and not side to side on a flat surface, as in a printed book. Here, in the building, I can go sideways too, but it feels differently; like breaking through a wall. I move in three dimensions and I can feel the architecture in my senses.

PoliCultura, a three-year project created by Politecnico di Milano for the Italian schools, investigated a tension between creativity and regularity in online hyperstories created at school by young people using the same authoring tool (Garzotto, Herrero & Salgueiro 2010). Over 7000 students - from pre-schools to high schools - have been involved in the project using the same multimedia storytelling tool, a web-based authoring environment developed specifically for the project. The highest number of classes registered and stories submitted came from primary schools, which indicates that an interest in such an activity is greatest in primary grades. It is also ironic because until recently, most of the research studies that focused on digital or multimodal storytelling were done with preschool or high school students, omitting the middle grades altogether.

The hyperstories submitted for the PoliCultura project were created collaboratively by students in each class. In a collective storytelling activity, educational benefits are measurable by quantitative analysis at the levels of acquisition of skills and also at the level of shared expression forms and facilitated social interaction (Di Blas, Garzotto, Paolini & Sabiescu 2009). PoliCultura's collected data showed that children at the primary school level prefer imaginative narrative (fiction, fantasy), while higher education students are more conservative and tend to embrace an informative, more serious style of storytelling (Garzotto et al., 2010). Children's preference for fantasy and fairy tales in primary grades has been established before (Robinson, et al., 1974; Favat, 1977); but this study's data show that the children's preference has not changed.

The results highlight that the degree of creativity and engagement, as well as the variety of story subjects, are significantly higher in the lower levels of education than in high schools. The younger students use much more "original" content in forms of drawings and pictures created specifically for their project, while older students tend to reuse downloaded visual material from the Internet (Garzotto et al., 2010).

Most of the stories generated by schools in the PoliCultura project were grounded in a real-life experience undertaken by the entire class, for instance, a trip, a visit to a museum, or a science experiment. For example, one of the stories from a primary school was based upon a class trip in a forest region. Around this *real-life* experience, students created a *fictional* tale of magical encounters with mysterious forest creatures. Interestingly, in my previous research (2006) I encountered the opposite: When children created *fictional* stories of magic, they built on their *real-life* experiences.

By providing quantitative data, the researchers convincingly argue that digital storytelling in schools can be an extraordinary facilitator for a wide range of substantial educational benefits;

for example, the acquisition, consolidation, and retention of knowledge; heightened engagement; motivation toward learning activities; possible involvement of children with special needs; and also acquisition of digital literacy skills (Di Blas et al., 2009). The study also pinpoints some fundamental factors for large-scale prolonged and repeated use of storytelling authoring systems in schools: the pivotal role of teachers as drivers for adoption, low-cost, low-tech, simplicity of tools, and availability of methodological support to the development process.

Multimodal composing - case studies in middle grades. Ajayi (2011) explored how ESL/literacy learners in grade three used their socio-historical experiences and multimodal resources to mediate interpretations of *Cinderella*. The study's results suggested that female participants were critical readers who constructed a different cultural model of Cinderella that was personal as well as socially and culturally shaped. The author suggests that popular cultural texts should be studied in curricula as an object of social knowledge and critical analysis.

In Vasudevan, Schultz and Bateman's study (2010), fifth-grade students created personal stories through a multimodal storytelling process. The researchers found that multimodal projects providing multiple points of entry have the potential to invite all students, including those with a poor academic performance in particular, into school learning. When students are invited to bring their knowledge from their homes and communities and expertise with digital technology tools into the classroom, the understanding of who holds the authority and how academic identity is understood shifts.

In Silvers, Shorey and Crafton's (2010) study, grades one and two students engaged in personal inquiries about Hurricane Katrina in New Orleans through multimodal practices. Data showed that young children are capable of critical inquiries and that these inquiries can enhance the traditional curriculum. Significant is the long-term impact of such project on children: the

students could remember what they learned even after two years. Tying together a topic of interest with multimodal expressions within a story allows for long-term memory retention, as I have discovered in my own research (Charles 2009) as well.

Crafton, Brennan and Silvers' year-long study (2007) in grade one explored how the use of multiliteracies, including digital technology, could engage students in the critical inquiry of social issues. Children were introduced to visual grammar by exploring images from books and websites to learn how to 'read' them – their use of colour, placement on the page, and the author's intended message. To gain an understanding that there is more than one view of the story, the students role-played the participants in the article regarding a social issue in their community that concerned them.

Lenters and Winters (2013) highlighted the supportive writing environment that made possible for fifth-grade learners to produce individual, fractured fairy tales. The support consisted of a series of workshops with a professional acting company whose members also assisted the students with tips in how to write a script. Using drama and rehearsing their plays helped the students in their revisions. When traditional approaches to language arts are combined with modal workshops, students are given multiple entry points for expression and learning.

The aims of the Australian Research Council project, *Teaching effective 3D authoring in the middle years: Multimedia grammatical design and multimedia pedagogy* (2011), was to provide an account of children's multimodal stories and to develop a transformative pedagogy for multimodal authoring with the teaching of explicit multimodal metalanguage (Thomas, 2011). This large research study of multimodal authoring was conducted in primary schools in collaboration with two universities and the Australian Children's Television Foundation.

Using a 3D animation software program called *Kahootz* (which was developed by the Australian Children's Television Foundation), teachers were trained in visual literacy and the technological requirements of *Kahootz* to create movies using gaming platforms in 3D worlds. Teachers then worked with various classes, instructing them on the use of colour and composition, type of music to create mood and the use of camera shot angles to create meaning, before letting the students explore and experiment with their own movies. The project's data analysis showed that the multimodal grammar pedagogy appears effective in creating understanding although more attention is needed to teaching of the metalanguage, so that the children are able to better articulate their reasons for the construction of their work.

Children of the New Millennium (2010) was a research collaboration with the state Department of Education in Australia, exploring new forms of literacy. Within this large research project, Hill (2010) provided an example of a case study that taught multimodal texts to a grade two class in the unit on fairy tales. First, students moved from written text to image and then incorporated gesture, audio, visual and spatial design to create a multimodal text of their own. In the next step, the children were introduced to *Photostory*, software that converts digital photographs. To learn how modalities can communicate meaning, the children were instructed in visual design, demonstrated effects produced by the use of various camera angles, use of colour, sound effects, and music to set a different kind of mood. Further preparation consisted of planning and drawing a storyboard, creating plasticine figures of their story's characters and deciding on camera angles. Hill (2010) notes that the complexity of the creation of such texts goes far beyond what can be described and given value through the lens of traditional literacy. The study presented demonstrates the important process of modeling and scaffolding by the teacher. The framework that the researchers developed and called the "Multiliteracies Map" was

used to create a discourse between the teacher and students about how texts operate and make meaning, and was also used for assessment of the children's work.

It is important to point out that in this project as in the previous one, the teachers were trained first. Funding was made available for teachers' release time to participate as well as for their travel and accommodation, so teachers could attend interactive workshop sessions. As stated in Miller and McVee's (2012) principles of *teaching for embodied learning through multimodal composing*, teachers need to develop a new literacy stand and understand how multimodal grammar creates meaning so that they can support their students in their learning.

Emergent Multiliteracies in Theory and Practice was a collaborative university-school research project that brought together York University researchers and primary and junior grade teachers to develop multiliteracies pedagogies in order to engage a multicultural population in narrative learning using contemporary multimedia (Lotherington, 2011). In the project, the researchers used traditional tales and the multimodal process of rewriting them in order to invite the students into narrative construction as coauthors. The findings of the project were that Canadian children's concepts of culture are grounded in the digital rather than the physical world; that collaborative story creation facilitates narrative learning; and also, that to adapt a story, the children must first understand the plot of the story so that the essential narrative thread does not get destroyed. The researcher contends that "Rewriting stories through their own young eyes and mouths has allowed the children who begin school as marginalized populations to take center stage in their own learning" (Lotherington, 2011, p. 273).

Conclusion. Research conducted in the four areas of (1) narrative and multiple perspectives (Ryan, 2009; 2010; 2013; Harris, 2000); (2) hypertext formats (Aarseth, 1997; Papson, Goldman & Kersey, 2007); (3) multimodal composing (The New London Group, 1996;

Miller & McVee, 2012); and (4) creativity (Cropley, 2001; Kim, 2011; Piaget, 1962; 1981) shows that young people are currently experiencing a lack of interest in other people's point of views, a decrease in creative thinking to imagine alternatives, and an inability to synthesize information from various sources into a comprehensible whole. In a world of ubiquitous connectivity where multiple sources of information are instantly available, students must learn to think for themselves. As Federman (2005), an education researcher at the University of Toronto, argues, "It is a world in which the greatest skill is that of making sense and discovering emergent meaning among contexts that are continually in flux" (p. 11).

My project aims to address the documented decrease in creative thinking among young people through a ludic pedagogy consistent with Piaget's cognitive constructivism to promote divergent thinking and opportunities for synthesis. Creating a new form of narrative - hyperstory - may allow for the ability to reflect, to think deeply and to learn.

Chapter 3

Methodology

This project investigated the questions: (1) How will multiple perspective storylines through multimodal representations shape students' storytelling? (2) How will students express the characters' points of views of the events, the characters' motivations and emotions in their individual work? (3) What can students' creation of the storyworld tell us about how they see their own reality and the world in which they live?

Project Design

Murray (1997) contends that, "when we move narrative to the computer, we move it to a realm already shaped by the structures of games" (p. 129). "[E]ach move in a game is like a plot event in one of the traditional stories" (p. 143). In my understanding, this equation implies that moving through the plot events should become like a game! But what would be the narrative game's goal? Why would the reader/ interactor want to scroll through several parallel pathways in a hyperstory? What is "in it" for the interactor?

Jenkins (2004) suggests that the genre of mystery story helps to motivate the interactor and provides a rationale for the efforts to reconstruct the story. Thus, framing the project's hyperstory as a mystery, would build upon students' prior knowledge of the mystery genre. The readers/ interactors - would understand their roles are to be detectives in order to find out what happened in the story. Furthermore, if each of the characters' storylines was open-ended with each character posing a question, the questions would serve as prompts for the interactors to continue and look for more clues, connect the pieces to solve the puzzle, and draw a conclusion; this synthesis is what I am aiming for.

Murray (2011) proposes to use traditional narrative roles and Propp's functions as a framework for interactive narrative. She suggests a "back to the basics" approach and draws on the building blocks of fairy tales – 'functions' as Propp identified them, and on character archetypes in fairy tales. Vladimir Propp was a Russian linguist who analyzed over a hundred Russian fairy tales and concluded that all tales, no matter how different their characters or settings, contained clusters of the same building blocks. Propp's functions (or 'actions' as I call them) are the key events that drive the story forward and form the basic plot. As noted earlier, in my previous research (Charles, 2006), I transposed Propp's structural system into graphic symbols and used them as maps for the scaffolding of children's invented stories.

Designing a template for the classroom hyperstory. For creating the baseline story in the classroom, I worked with the structure of the *Snow White* story. This is a tale with complex emotional undertones, dealing with jealousy, abandonment and endurance. To design the template (or the architectural plan) for the hyperstory, first I compared and analyzed several multicultural versions of the *Snow White* story in order to identify the character roles and events as represented by Propp's functions – that are constant in those versions. As a second step, I set parameters for the classroom hyperstory as follows:

1. Children will create five parallel stories, each written, shown or told in the first person (character's voice), either as a diary entry or a witness account of the events experienced. This will provide five possible starting points and offer the reader a choice.
2. Each character's story will be in a temporal sequence and include *only* the scenes that the character appears in.
3. The navigation will be divided into numbered scenes (or episodes) which will be the Propp events as represented in the story, and those scenes will be marked by graphic

action symbols for easy identification, and serve as a navigational guide for the reader-interactor.

4. Each scene's page will show the participating characters (perhaps by their names or drawn portrait vignettes) so the interactor will be aware of the possibility of switching to the other character's point of view of the same scene.
5. The interactor will be able choose which character to start with and could either view it in a linear fashion (only by clicking on hyperlinks attached within) towards the story's open-end and then proceed with another character's story, or by switching at the junctions to view the other participating character's point of view and then going back or staying with this other character's storyline.
6. The hyperlinks attached to each character's pathway will be limited in number so that the interactor does not stray too far from the core story.
7. Each character's telling will end with an "I wonder..." question. For example, the villain could ask - how did the hero/ine manage to survive? How did it happen that he/she got rewarded this way? The helpers (unusual people or creatures) could wonder - why couldn't we come home earlier? What happened here while we were gone? The accomplice could ponder: What happened to that boy/girl after I told him her to run? Is he/she still alive? These questions would urge the interactor to carry on and explore the other storylines.

A template for the hyperstory containing structural events/scenes and the five character roles (1) villain, (2) accomplice ("dispatcher" in Propp's terminology), (3) helpers - magical people, (4) heroine and (5) rescuer (which is prince or 'prize' in Propp's terms) in *Snow White* is shown in Figure 1.
















SYMBOLS OF PROPP'S ACTIONS	CHARACTERS:	VILLAIN	ACCOMPLICE	HERO/INE	UNUSUAL PEOPLE	RESCUER
 1. Parents leave or are absent from home	Scene 1 <i>Initial situation</i> <i>Introducing yourself</i> <i>'Something about me'</i>					
 4/5. Villain asks question, gets the information	Scene 2 <i>The question and the answer</i>					
 6. Villain tricks the hero, assumes a disguise	Scene 3 <i>The villain's plan</i> <i>The meeting with an accomplice</i> <i>Preparation for an abduction</i>					
 7/8. Hero/ine is fooled and taken away	Scene 4 <i>The evil plan is carried out</i>	possible				
 9/10. Hero/ine goes or is sent on journey	Scene 5 <i>The hero/ine sets on a journey</i>	maybe				
 11. Hero/ine meets magical or unusual people	Scene 6 <i>Finding a place of magical people</i>					
TEST 12/13. Hero/ine is tested for kindness and help	Scene 7 <i>Hero/ine enters the place of magical people, shows her skills and kindness</i>					
 14. Hero/ine is rewarded	Scene 8 <i>Hero/ine is rewarded for his/her kindness</i>					
 Repeat move - 4/5. Villain asks question, gets the information	Scene 9 <i>Question asked again;</i> <i>Answer received</i>					
 6. Villain tricks the hero, assumes a disguise	Scene 10 <i>Villain's evil plan 2</i>					
 16. Hero/ine confronts the villain (or his accomplice)	Scene 11 <i>Evil plan succeeds</i>					
 17. Hero/ine is wounded	Scene 12 <i>Hero/ine loses consciousness</i> <i>Magical people are devastated</i> <i>Put her outside in some ritual</i>					
 23. Hero/ine is unrecognized	Scene 13 <i>Hero/ine is discovered and taken to some place</i>					
 25/26. Hero/ine undertakes test or task. The test or task is accomplished	Scene 14 <i>Hero/ine awakens,</i> <i>Is recognized and rewarded</i>					
 30. Villain is punished	Scene 15 <i>The villain is punished</i>					
 1. Home (additional symbol for ending of story)	Scene 16 <i>Afterword</i>					

Figure 1. Template for 'Snow White' story.

Initial Classroom Procedure - Creating a New Story

In all three studies the initial process of inventing of a new story was identical. The baseline of the story was created over two sessions. In the first session, I read the students a sample tale, a version of the *Snow White* story, “Bianca and the Six Robbers”, from the book, *It’s Not About the Apple* (Charles, 2010). The students were not shown the illustrations from the book so they could visualize the story themselves. I replayed the story on the magnetic board with symbols that showed the events in the sequence, using magnets representing the story’s characters. The symbols used were pictographs created in my previous research study (Charles, 2006) that visually communicate Propp’s functions, the building blocks of fairy tales. Then, guided by questions and the map of the tale’s structure, the students collectively invented their class story, created their own characters, setting and episodes. Their story served as a baseline for each individual study.

After the first session, I broke the students’ story into scenes and compared each with the “Snow White” template of the story I told. In each of the three studies, the story mutated into a different shape from the original story’s guiding template. Even some of the characters’ roles shifted. For example, in Study A the villain’s accomplice did not take the heroine away but rather it was the heroine who followed the villain. In Study C, the students eliminated the *accomplice* role altogether but in order to make their story to work, they added another secondary character (which in a way functioned as a replacement for the missing *accomplice* role). Still, most of the events were present in all of the students’ stories, though perhaps in a bit of a different order. The template had to be adjusted to reflect the students’ new story. The new characters’ names, as well as short descriptive lines of the story’ events, were entered. The

template functioned as a storyboard and showed in which scenes the individual characters participated.

In the second session, students were asked more probing questions about details in the story. For example, in Study A, I asked the children, “What is the potion the villain made?” and “Why is the heroine suspicious of the villain?” The classroom teacher recorded the students’ answers and they were integrated into the story. Stories were revised accordingly online with the assistance of the classroom teacher present, using the white board display. Then, I explained to the students that they would be telling the story from the perspective of a character they chose, and they were free to enrich their characters’ stories by adding drawings, photos and sounds, in any way they wished. Within each group, the students then decided which character in the story they wanted to be. As there were five character roles in the story and only four students in the group, one student in each group took on two minor character roles. Each student was provided with the template of the story for guidance before they started to write. In Study A and Study B, the digital data was stored in *Google Drive* by the teacher librarian who was also a digital specialist of a School Board.

Participants and Context

After receiving ethics approval from York University and approval from the External Research Review Committee (ERRC) of the Toronto District School Board, I contacted several teachers and librarians previously known to me through *author’s school-visits*, in order to gain access to grade four or five classrooms. The project was explained and upon their expression of interest, the form letters to principals and to parents were submitted. After receiving consent, arrangements were made with the teachers for my classroom visits.

The fieldwork research encompassed three individual case studies referred to as Study A, Study B and Study C. In Study A and B, conducted in the same school, digital technology played an integral part. All students wrote their stories on *Acer* computer notebooks in *Google Docs* and were connected to each other, the teacher, and myself by *Google Drive*. That allowed students to view each other's work and allowed both the teacher and myself to give the students feedback directly in their documents. By contrast, the students in Study C (that was conducted in another school) used old technology, writing and drawing in paper notebooks with pencils and pens, because the access to digital tools in their school turned out to be problematic. There were not computer notebooks or iPads available to students in their classroom. This school had a significant student population and there was only one small computer room which was shared by all the students in the school and was located in another building far from the students' classroom. The school computer room needed to be booked well ahead of time. As the focus of my project was on the *content of students' work and not on students' use of digital tools*, the limited access to computers did not seem to be a major obstacle. Although videotaping and sound recording in Study C was not possible, students' multiple perspective storylines and their artwork could be digitized and digitally assembled in a computer with the assistance of a school information technology specialist, and produced in the form of hyperstory later.

Thus, the fact that Study A and B were conducted with the use of digital tools and Study C without was *not* intentional. It arose from the reality of the availability of the digital tools in the two specific schools. Study A was conducted from January to March 2016. Study B between April and June 2016. Study C was conducted over seven double sessions that took place between April and June 2016.

Study A and Study B

Westview is an elementary inner-city school in Toronto. The school is located in a low-income, working-class neighborhood with a predominantly Portuguese, Vietnamese and West Indian population.

Participating teacher/ librarian. Moira Carter is an elementary Librarian and Resource Teacher at Westview Junior public school. She also takes an active leadership role as a *Digital Lead Learner* within the Professional Learning Network of teachers dedicated to supporting the use of technology across the school board, and who facilitates workshops for the Teaching & Learning with Technology Department.

When I contacted the teacher about my project, she thought that the project would be beneficial to her special needs students, as it offered an alternative way to create a narrative. She was also interested in exploring the technological side of the project. Her school began using iPads in the classroom about three years prior to my coming and the teacher used *Google Drive* on a regular basis to store students' work in files. While taking an online iPad course, the teacher learned about the app, *Book Creator*, and suggested that we use it for the project because of its ability to combine multimedia content. She also thought that linking the pages, transfers from one character's point of view to another, might be possible using hyperlinks in *Book Creator* and was eager to try it.

Study A – Students/ Participants. The participants were four girls, 11 years old, three black and one Caucasian. They all spoke English but one of them, the Caucasian girl, was extremely shy and quiet. She had emigrated to Canada only a few years prior to my visit. They were all special needs students who were diagnosed with learning difficulties, and were perceived by the principal as having “extreme difficulties with writing”. The students were

withdrawn regularly from the classroom for reading and writing support to work with the librarian. Although they were in grade 5, these students were assessed on a different basis.

The sessions took place in the school library during the first morning period. This was the allocated time for these four students to work with the teacher/librarian and to receive special help in reading and writing. I came to the school twice a week but the students worked on the project even on some days when I was not present.

Study B

Study B was conducted immediately after study A in the same school and in collaboration with the same teacher/librarian with a larger number of students.

Study B - Students/ Participants. The participants were 16 students, 12 girls and 4 boys aged 10 to 12 years with a lot of ethnic diversity among them. Predominantly, the students were of Vietnamese, Portuguese and West Indian descent. The students were selected from grades 4, 5 and 6 for the project by the school principal, who described them as ‘good students’, which implied that they were cooperative and proficient in reading and writing. We met in the school library two times a week in the morning to work on the project. The teacher/librarian, who worked with me on the previous study, assigned the students into four groups that consisted of students from different grades. At times students from a particular grade were absent due to other class commitments, therefore group attendance was not always consistent.

Study C

Demographics. Parkwoods Public School is located in an established, middle-class neighborhood in Toronto. There are few recent immigrants and all children speak English. The majority of the children are of European descent but there is some racial mix. The teachers and

the school librarian noted that the parents are very much involved with the school and the curriculum and many children are being read to at home.

Students/participants. The participants were 24 grade-four French Immersion (early stream) students, 15 girls and 9 boys, with some ethnic diversity. All of the children spoke English. Two students, a boy and a girl, were diagnosed with learning difficulties but I was not informed about the nature of their difficulties.

Background of the study/ context. In the early French Immersion stream in Ontario, all instruction is in French, starting in kindergarten. English is gradually introduced at the beginning of grade 4. According to the Parkwoods school principal and teachers, their French immersion classes exhibit slightly different characteristics than the English stream. The students in these classes tend to be more mature and engaged. Also, I was told that the students appear to come from families where the majority of parents have a post-secondary education and are financially better off.

The teacher who expressed interest thought that the project would be a good fit for her students to work on during their English language part of the curriculum. Unfortunately, after the baseline of the story was created, that teacher left the school and there was a gap of two months before the project resumed with her teacher-substitute. The sessions took place in the classroom, usually on Friday afternoons and consisted of two 45-minute periods with a recess break in the middle. The students sat and worked at their desks in groupings of four.

All in all, the research project was conducted with a total of 44 participants, students aged 10 to 12, and with the collaboration of their teachers over a period of six months. My role was both as a participant observer and as a guide to the project's collaborative inquiry.

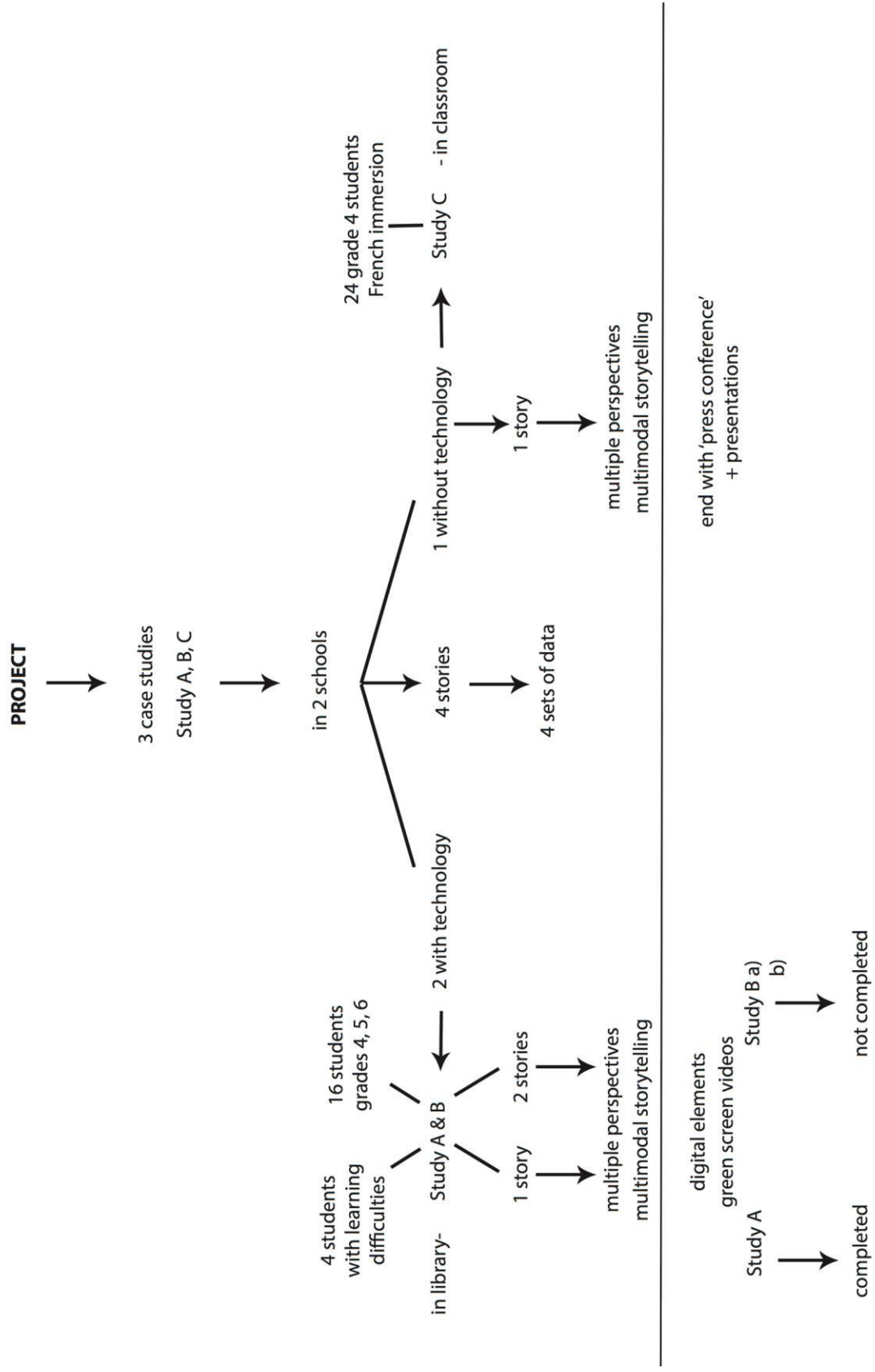


Figure 2. Project at a glance.

Project Methodology

The research study was grounded in qualitative research methodology. I observed the study participants, and attempted to make sense of, or interpret their activities in terms of the meanings students brought to them (Denzin & Lincoln, 2005). In my qualitative inquiry, I borrowed from several theoretical orientations. For example, because my role in the study was as a participant-observer and an interviewer, my research crossed into the phenomenology tradition. The phenomenological approach consists of observation and in-depth interviewing (Patton, 2002), and it studies how people describe things and experiences through their senses (Husserl, 1913). In the analysis of the students' stories I documented how the participants conveyed their meanings through different modalities such as images, symbols, sounds and gestures to express the emotions of the story's characters.

Predominantly however, the research fell under the umbrella of social constructivism, the theoretical tradition that focuses on 'the meaning making of the individual mind' (Crotty, 1998). In the social constructivist method, different perspectives of participants are captured to document how the participants understand reality (Patton, 2009). Elements of sociocultural and social constructivist theories were used as lenses to analyze and explain the students' work, their creative processes and their activities that I observed in the study.

In the project, I assumed the role of a participant-observer (Spradley, 1980). My researcher's stance was interpretative, viewing the reality as socially constructed by interacting with research participants (Glesne, 2011). I used an emerging qualitative approach to my inquiry, meaning that the initial plan for research was not fixed but was adjusted or modified after the study began with the participants (Creswell, 2007).

Method of obtaining data and method of analyzing results. The project combined qualitative research supported by observational frequency count. The studies were conducted in a school library and the classrooms of the participants where the data was obtained through multiple sources:

1. Students' artifacts (written individual stories from characters' points of view and completed multimodal work in digital form)
2. Extensive and detailed notes and observations; digital data from all sessions in Study A and B, stored in Google Drive
3. Students' retelling of the story (written or verbal)
4. Transcripts from taped interviews with students, conducted at the end of each study; debriefing of teachers

The multiple data were organized into categories that cut across the sources to develop themes and patterns. For the research analysis, I used a data triangulation method to ensure the validity of the study's results and to remove potential biases. The triangulation data points were the students' artifacts, my detailed notes from observations, and the transcripts from taped interviews with the students.

Questions	Data
<ol style="list-style-type: none"> 1. How will multiple perspective storylines through multimodal representations shape students' storytelling? (A, B, C, D) 2. How will students express the characters' points of views of the events, the characters' motivations and emotions in their individual work? (A, B, C) 3. What can students' creation of the storyworld tell us about how they see their own reality and the world in which they live? (A, B, C, D) 	<ol style="list-style-type: none"> A. Students' artifacts (storyboards, individual stories from characters' points of view and completed multimodal work in digital form) B. Extensive and detailed notes and observations; digital data from all sessions in Study A and B stored in Google Drive C. Students' retelling of the story (written or verbal) D. Transcripts from taped interviews with the students, conducted at the end of each study; debriefing of teachers

Using the lens of sociocultural and social constructivist theoretical traditions, I was guided by the question: How have the children in their particular settings constructed their storyworlds? It helped me to understand children's narrative activities and their use of multimodal expressions as a form of symbolic action and to situate their stories in the sociocultural context of their lives and their cultural worlds. I also used the data from children's interviews to show how the participants understood the characters' points of view in their story and how they constructed the storyworlds through the multimodal fragments. Here, principles of hermeneutics inquiry were applied to the interpretation of the students' work: to know what the author wanted to communicate in the story, to understand intended meanings and to place the created text/artifacts in a cultural context (Palmer, 1969).

Framework for analysis of students' perspective writing. For analysis of the students' narratives written from the characters' points of view, I drew upon the work of Uta Hagen (1973), a legendary teacher of stage acting. Hagen states that to step into a character, this is what a person needs to know:

Character:

1) Who am I?

2) Where am I? What time is it? What surrounds me?

What are the given circumstances (past, present and future)?

3) What is my relationship (to events and other characters)?

4) What do I want?

5) What's in my way?

6) How do I get what I want?

Hagen's questions gave a structure to my qualitative inquiry. They became the points I was looking for in students' stories to find out whether the students were writing, drawing or acting 'in character'. When it came to analysis of the students' multimodal work, content was my sole concern. There was no judgment or evaluation of the children's skills of execution, and no response to the prettiness or vibrant colours of the images, unless the colour was used to express meaning.

Framework for analysis of observational frequency count of students' work. To devise categories under which it would be possible to quantitatively rate students' work, I draw upon Bruner's narrative concept of 'Dual Landscapes': Landscape of Action and Landscape of Consciousness. Bruner (1986) argues that well-formed narrative involves integration of plot events, characters and their consciousness. He suggests that there exists a 'Dual Landscape' that

is being played out simultaneously. The landscape of action consists of the outer reality, the setting, the characters' plight, their motivation and instruments. The landscape of consciousness conveys how the characters feel, what they think and what they know, as the events unfold. Personal perspective and reflection is a standard way of adding a landscape of consciousness into narrative accounts (Brunner, 1986).

Brunner's concept of 'Dual Landscapes' informed Nicolopoulou and Richner's (2007) developmental typology constructed for their research analysis of character representation in preschool children's self-created stories. Nicolopoulou and Richner proposed three basic levels of character representation: from *actors* to *agents* to *persons*. It is important to note that Nicolopoulou and Richner use the term *actor* in a different capacity than Hagen (1973). In their typology, the *actor* is simply a being, almost like a puppet, who moves across the events of the plot; for Hagen, an *actor* is a fully rounded being with feelings and emotions. (This would fall under Nicolopoulou's category of *persons*). Nicolopoulou and Richner relate the development of characters' representations in children's narratives as follows: at first, children describe characters as *actors*, that is, they depict the characters' actions without referencing the characters' internal states. This characters' representation is the most common in the stories of preschool children. When the children start to describe the intention of the characters as related to their actions, the characters are regarded as *agents*. It has been observed that only in middle childhood, around 8 – 9 years of age, children are able to portray *persons* in terms of psychological characteristics, attitudes, interests and dispositions (Flavell, Miller, & Miller, 2002). As the participants of my project ranged between 10 to 12 years of age, I will only explore their character representation in the category of *persons*.

Coding for a reflection and an emotion. The *Merriam Webster dictionary* defines ‘reflection’ as “a thought, idea, opinion or a remark made as a result of meditation; consideration of some subject matter, idea, or purpose.” The same dictionary defines ‘emotion’ as “1) the affective aspect of consciousness: feeling 2) a state of feeling 3) a conscious mental reaction (such as anger or fear) subjectively experienced as strong feeling usually directed toward a specific object and typically accompanied by physiological and behavioral changes in the body.” To find out if the children were able to imbue their characters with consciousness, students’ stories were coded for a number of characters’ reflections and emotions. First, I created a chart with headings for what I wanted to know:

Group
Student’s gender
Student’s age

Character:

Depiction of external characteristics

- text
- image

Depiction of internal state – thoughts, beliefs, moods

Character’s motivations

Character’s emotions

- expressed in text, font sizing and onomatopoeic words/sounds
- image

Empathy towards other characters

Character’s reflections

Reference to popular culture

As a next step, I extracted applicable parts of each student’s writing and inserted them into their charts. The charts made it easy to look across the students’ stories and compare how the students stepped into the characters. Organized under the headings, it was easier to spot similarities, differences and patterns among students’ work. Finally, reflections and emotions on each student’s sheet were colour-coded and counted.

As empathy is an emotion, it was marked under the column ‘empathy’ as well as the column ‘emotions’. For example, the sentence, “All of a sudden Audrey’s face turn bright red, poor her, she Always works so hard!” was counted in both columns – as emotion and an expression of empathy. If the same idea were expressed differently in several sentences, it counted as one reflection only. Where a student’s reflection contained emotion, it was marked in both categories. For instance, a student in Study C writing from Audrey’s perspective wrote this sentence: “I hate this, that means Makala did this.” “I hate this” was considered an emotion and was placed in that category. “...that means Makala did this” was considered a reflection and was placed in that category. Thus, one sentence was counted in two separate categories. Another example from a student portraying the same character: “Yesss!” She’s so gone! Now I can sit back and relax, 😊” The two expressions “Yesss!” and the emoji were marked as one emotion because they reflected the same situation. “Now I can sit back and relax,” was counted as a reflection.

Under the ‘emotion’ heading, I counted emotions expressed through verbs, such as “I hate...” or “I love...”; emotions expressed in adjectives, such as “I was shocked!” or, “I’m so happy!”; emotions expressed in onomatopoeic words, and use of font sizing; and emotions expressed through images and large-sized emojis that were included in text as illustrations. Also counted as points were the students’ expressed emotions in videos that were manifested in their

body language while acting in role. The process of coding and counting was done on two occasions, several weeks apart. The first time, the individual students' sheets were coded and the second time the coding was done directly on the students' texts. The later check revealed a few missing reflections and those were then added onto the students' count.

In all three studies, the students worked in groups of four. As there were five characters in each of the stories, one of the members in each group took on two minor characters which appear in a smaller number of scenes in the story, thus making the scope of their work compatible with the other members of their group who worked on major characters who appeared in the majority of the story's scenes.

Chapter 4

Data Analysis of the Three Studies

Results from the three individual case studies (referred to as Study A, Study B and Study C) that comprise the research project are presented separately. A synopsis and template of each class-created story is followed by a description of the classroom process during which students wrote from characters' perspectives and created their multimodal work. This section addresses the project's question: (1) How will multiple storylines through multimodal representation shape students' storytelling? Then, narrative analysis of the students' individual work is presented that provides answers to the project's questions: (2) How will students express the characters' points of view of the events, the characters' motivations and emotions in their individual work? (3) What can students' creation of the storyworld tell us about how they see their own reality and the world in which they live? Finally, the multimodal work in all three studies is discussed that addresses all of the three questions.

Study A

Synopsis and template of the class-created story - *The Competition*

Teenaged students are studying singing at school. Brooks is jealous of Amber's talent and tries first unsuccessfully to poison her with a potion camouflaged in a bottle, then casts a spell to trap Amber in the woods. At night, Amber climbs a tree for protection, where she finds some hungry birds whom she feeds. The birds teach her how to sing high notes that break the spell. Amber returns to school where the singing competition is just beginning. Brooks drinks her own potion by mistake and loses her voice. Amber wins the competition.














SYMBOLS OF PROPP'S ACTIONS		CHARACTERS:	BROOKS	IVY	AMBER	BIRDS	TEACHER
	1. Initial situation	Scene 1 Introduction: "About me"					
	4/5. Villain asks question, gets the information	Scene 2 Brooks asks question Ms. Penelope answers					
	6. Villain tricks the hero, assumes a disguise	Scene 3 Brooks makes a plan Cooks a potion					
	7/8. Hero/ine is fooled and taken away	Scene 4 Brooks uses Ivy to pass the potion to Amber Amber is suspicious					
	<i>Repeat move -</i> 4/5. Villain asks question, gets the information	Scene 5 Brooks finds out her plan failed					
	9/10. Hero/ine goes or is sent on journey	Scene 6 Amber follows Brooks into the woods					
	6. Villain tricks the hero, second plan	Scene 7 Brooks casts a spell to keep Amber in the forest					
EMERGENCY	8. Villain steals the object or abducts a person	Scene 8 Amber is trapped in the forest by Brooks' spell					
	11. Heroine meets magical or unusual people	Scene 9 Amber meets the birds					
TEST	12/13. Hero/ine is tested for kindness and help	Scene 10 Amber feeds the birds					
	14. Hero/ine is rewarded	Scene 11 Birds teach Amber high notes that break the spell					
	20. Heroine returns	Scene 12 Amber returns to school					
TASK Or TEST	25/26. Hero/ine undertakes test or task. Test or task is accomplished	Scene 13 Singing contest in school					
	30. Villain is punished	Scene 14 Brooks drinks the potion by mistake She loses her voice					
	27/31. Hero/ine is recognized, rewarded, and/or is married	Scene 15 Amber wins the competition					
	1. Home (additional symbol for ending of story)	Scene 16 Afterword Questions by the characters - I wonder what happened...					

Figure 3. Template for Study A story - *The Competition*.

Writing from the Characters' Perspectives; Description of the Classroom Process

Participants in Study A were four girls, 11 years old, who were all diagnosed with “learning difficulties” but I was not informed what those difficulties were. The students came on a regular basis to work with the teacher in the library, where our sessions took place.

After the new story was created, I printed the story’s template for each of the students, and anticipated that in the next session some further planning would take place. Instead, the teacher brought in the computers the students used for their writing, asked the students to log in and start working on their character’s story. It was clear that these students did not know how to start so I suggested that we play out the scenes in order to understand what was happening in the story.

I demonstrated by assuming one of the character’s roles myself and addressed the student (the other character in the scene) by her character’s name. The student reacted in character while the teacher videotaped us. This was a key turning point in this study. Now the other girls wanted to act out the scene too and to do it over and over again! This process seemed to be really helping the students to understand what it meant to see the scene from the character’s point of view. Going physically through the motions helped the students to feel the characters’ actions and emotions. This was really ‘stepping into the character’s shoes’, stepping into the story. As the girls were acting, I narrated what was happening while the teacher wrote down on the White Board the sequence of what each character did so the students could refer to it and describe it in their individual stories. From this point on, the acting became an integral part of their story creation. Eventually, it evolved into making videos using the *green screen* process.

Writing with digital technology. Digital technology played an integral part in creating the project in this school. The students wrote on their laptops and received individual help from

the teacher. As these students found writing challenging and the difficulty of putting the words down seemed to freeze their train of thought, the students would orally describe what was happening in the story and the teacher typed their words for them. In their storytelling, students were guided by the story's template. Because the template showed the story divided into scenes and in which scenes the characters participated, it provided a scaffold and allowed the students to focus on just one scene at a time. These markers were important for the project, as they indicated the timeline of the events and allowed us to switch from one character's point of view to another when the stories were assembled. If the function of storyboarding is to plan what happens in the story in panels, the template in fact served as a "three-dimensional" storyboard.

Editing. After each session, I carefully reviewed what was done by each of the students. I made comments, suggested how the typeface sizing could be made more effective, pointed out spelling mistakes, repetitions, capitalization of names and punctuation that should be corrected. In a way, I served as an editor of the story; I made constructive remarks but it was up to the students to make the corrections themselves. The comments were inserted into the students' files, so the students could work on the corrections during the days that I was not present. However, the students did not attempt to correct their spelling mistakes independently or use a *spell check* on their laptops. When I sat with one of the students by her computer, I pointed out some repetitions of the words in her sentences, and made suggestions about how to make her writing more precise. She hesitantly made the changes. Next session I noticed that the repetitions still appeared in the text. In short, the students did not edit. Once a sentence was written, for them it was final.

Throughout the project, I had to continuously monitor the students' story scenes to make sure that later on we would be able to transition from one character to the others, and that the

scenes would be compatible. Keeping the story on track meant that I had to assume the role of a *Script Supervisor* like a member of a film crew on a movie set. The font the students had chosen had to be kept consistent; the artwork had to match what was seen in their videos; the timeline had to be kept throughout the scenes. Most importantly, the sequences of what was happening in scenes had to be coordinated across the telling by each of the participants. Here is where I noticed several discrepancies in the students' work. For example, in the scene about the singing competition, each of the students described in their character' story the performers appearing on the stage in a different order. Reading across all of the stories, the scene would not make sense. In another scene, the characters reported different facts: *Brooks* said, that moths and flies come out of her mouth; *Amber* stated they were bats, flies and mice; *Ms. Penelope* and *Ivy* described flies and frog pieces. In the video the students made however, only mice were shown. Perhaps, here is where *graphic organizers* as a scaffold could be useful. The facts in the story cannot be radically different in each telling but can be recounted the way each individual character perceives them.

Digital collaboration. The collaboration among the students was not happening the way I envisioned it. Students worked independently and did not discuss their writing with each other or check on a computer in their *Google Drive* folders to coordinate with others responsible for the same story despite the fact that stories were available and easy to access. The students seemed to lack a curiosity about their peers' work. The *Google Drive* seemed to be mainly benefit the teacher; it charted the students' progression and provided evidence of what was going on. But the students did not take the opportunity the technology provided for their collaboration. However, it was necessary that the students discuss factual details in the story *prior* to their individual writing and check with members of their group after each scene. This is where the

collaboration within the group should happen – revising, compromising, working together towards coherency.

Enriching the Story with Multimodal Elements

The multimodal elements were added to the story as we went along. The students' personal way of expression unfolded in a natural way, as the students gravitated to specific modalities during the project. For example, Keisha was the *artist*. She drew the story's characters' portraits and made pictures out of plasticine. I asked her whether working with the plasticine was more difficult than drawing and she told me that it was; but still, she persevered. Keisha's artwork was inspired by the work of illustrator Barbra Reid, a master of the plasticine medium, who had recently visited their school. On the other hand, Brooke was the *actress*. She loved to clown and express herself physically. Brooke came to life when she was acting. During the acting skits, she encouraged and advised the other students on their *acting*. Jada leaned towards spoken word, singing and dancing. An easy-going and co-operative student, she liked to pitch in when something was needed. For example, one day we wanted to add a sound clip to the Ivy story but the student who was working on the character was absent and we did not know when she was coming back. Another student came into the library to play piano, and I could hear Jada humming to herself. I encouraged Jada to sing a bit louder, and she sang a song from *The Sound of Music* while the teacher recorded it. It was surprising to discover this student liked music and could sing. There was plenty of personal collaboration among the students while they were working on their artwork and acting out videos while there was none when the students wrote their stories on computers.

To support the students in their multimodal work, questions were asked and suggestions were offered. For example, I asked a student, "What does the Music School where the story

takes place look like?” and suggested the student draw or find the image on the Internet. Another student was asked, “How would you make the potion in the story?” The student pretended to stir the liquid in the pot and started chanting. On another occasion, I inquired: “How would you do the spell in the forest?” The student stepped into her character’s role and showed us the gestures, and the teacher took a photo of her. Later, when I saw the photo in the student’s digital file, I suggested, “What about if you draw a picture of the forest or find a forest image on the Internet? Perhaps we could combine the two and it would look like you were in the woods.” What I had in mind was a collage; the student’s photograph trimmed and glued onto the forest background. I was not thinking digitally. The student chose a photo of the forest from the approved sites on the Internet and put it into her file. That evening, the teacher posted a new photo into the student’ file, that combined both images digitally. The photo looked stunningly real. The question eventually led the teacher to explore her interest in green screen. She videotaped the students acting a scene in front of a green fabric draped over the library bookshelves and sent it to me. Our partnership became a symbiotic one. I was interested in the content the students would create and the teacher was interested in digital applications and in the potential of the green screen technology.

Students’ engagement. As the project progressed, the students appeared to be more deeply engaged with the story. They came to the library on their own and worked on their stories even at lunchtime, as well as worked on them at home. When they read from their character perspective storylines, they read with expression! The printed words had now acquired a meaning for them. The students were noticing details in their text and their video acting and they wanted to revise them. They strove for perfection. The students also became more adept at spotting mistakes in the visual aspects of the story. For example, in the scene where the

protagonist is climbing the tree, the text says that it was getting dark. The student, who had the protagonist's role, noticed that the photograph used in the background was in the daylight and asked us to change it. The student portraying the villain observed that the wart on the nose of her character was missing in the video, so the whole scene had to be filmed again. The students themselves were becoming the *continuity* supervisors. At the beginning of the project, the students were hesitant to try new things. As the work progressed, the students were coming out *of their shells*. At the last session, one student asked, "are we going to do another story?" In sum, these students became confident, willing to experiment and they were proud of their work.

Story's digital assembly. After the students finished their stories, the digital data stored in *Google Drive* were formatted and assembled using the iPad app *Book Creator*, which had the capacity to combine multimedia content. The application made it possible to read the created content as an e-book on an iPad, a computer and even on an iPhone. Due to the length of the project and time constraints, students *did not* input their work into the *Book Creator* app. All formatting and digital assembly were done by the teacher I collaborated with on the project (who was a digital specialist for the District School Board) and myself. However, students had contributed their ideas and opinions into all decisions about font choice and colour as well as into the videos and images.

In addition to the *Book Creator* app, the teacher also incorporated *Do Ink's Green Screen* app, *App Smash*, *Superimpose* app and used an external microphone, *iRig Mic*, to improve the quality of sound recordings. Hyperlinks were added to link different pages together so the reader would have a choice as to which story to read first and have the ability to *move* during the key scenes to see how the other characters reacted in the same scene and told their story. Editing had to be done in other applications. For example, the "image cropping" had to be done in *iPhoto*,

video editing in *iMovie*, and sound editing in the *GarageBand* app. We had many problems with downloading the new version of the story with the added links (from one character's point of view to another) on the iPad, as the app was not programmed for what we were doing. The technical problems we encountered had not been envisioned by the app designers. The teacher had to contact them to request that they adapt the programme for us. At times, it all seemed very crude, and felt like being back in the silent-movie era.

During the process, the teacher and myself assumed the roles of a team in a traditional publishing company: an editor, a proof-reader, an art director, a graphic artist and a production designer. In a traditional publishing house, the time allotted for putting a picture book together can run anywhere from 12 to 18 months, or even longer. If the students were to assume the roles of a team in a publishing company, some additional skills would have to be introduced. In any case, in the teacher's estimate it would take at least another two to three weeks for the students to learn how to use the digital tools in the *Book Creator* app in order to do the assembly of their story themselves. The digital tools in the *Book Creator* app would have to be introduced, taught and practiced by the students first.

The resulting *look* of the digital story students created was then a direct result of the technology that we used. The hyperstory was designed to be viewed as single pages on the screen. To be viewed the way it was intended, the *display setting* must be changed from the two pages side by side (landscape format) to a "single page" view by clicking on the setting button. The finished hyperstory can be viewed at bit.ly/TheCompetitionBook

Narrative Analysis

In Study A, the students created a true fairytale: A story involving human protagonists and elements of magic. There is a witch (not a traditional one but rather her modern rendition), a

magic potion, birds who talk in human voices and a transformation of dress. Interestingly, the magic potion in the story is similar to a motif that appears in many folktales, although the students seemed unaware of it. In the *Kind and the Unkind Girls* type of wonder tales (Aarne, 1973), the kind heroine is rewarded by a potion that makes diamonds and pieces of gold fall out of her mouth when she speaks. The rude and selfish girl is punished by having frogs jump out of her mouth instead. The students were surprised when I showed them one of those tales at the end of our project. In the story the students created, the villain is jealous of her classmate's singing abilities and the story is set in motion by the villain's desire to win the school singing competition.

Making meaning for themselves; personal connections. The story is set in Oakville, a town near Toronto. "Why did you pick Oakville?" I asked Keisha after the session. She explained, "because it [Oakville] is nature like, near the water and trees. It's not like the area where our school is." The idea for *Music school* came from Jada who, as I later discovered, had an interest in music and possessed singing abilities. Two of the students named the characters they chose to be by variants of their real names, perhaps to mark their ownership of those characters. The protagonists in the story are 16 years old, just a bit older than the students themselves. Jada told me that the reason she made the teacher in the story, Ms. Penelope, 27 years old is "because my own birthday is on December 27th". In sum, the students created their story by establishing personal connections within to make it meaningful for themselves.

The process of creation of the story served as a vehicle for students to project *their own* feelings. For example, during the project, Jada in her Ms. Penelope's story put both characters Amber and Ivy on the stage as a duo that wins the competition. However, only Amber, the heroine, was supposed to perform at that point. Why did Jada do that? I noticed that Jada asked

the teacher librarian a lot about how to reach Iris, another girl from their group who was absent from school for several weeks. That girl was writing from the perspective of the character Ivy. I wondered, was Iris Jada's friend? It appeared so, because in her other text from the Bird's perspective Jada wrote, "We like this kind of flower: It is called Ivy. We also like this flower: Iris." She included both of the images. Was the reason why Jada put the character Ivy into the starring role, and made her win the competition in a duet with Amber, because she was sad her friend was absent? I spoke to Jada about Iris and she told me she missed Iris terribly. Perhaps elevating her friend's character role and making her also the winner of the competition helped Jada momentarily to cope with her feeling of sadness and loss. The story may have been a canvas for Jada to paint her feelings on.

Characters' portrayals.

The heroine – Amber. In the *Snow White* type of story, a heroine is usually unaware that her personal attributions cause a turmoil in the antagonist's mind, and of the villain's intrigues that are taking place around her. Interestingly, in the story the students created, the heroine is not easily fooled. She is suspicious of the villain, takes charge and actively pursues the villain into the woods to find out who the villain really is. In a way, the student altered the archetypal character's core.

"...I see Brooks doing something strange. I see she looks at me but I don't drink the drink, I leave it on the desk. Then I go tell Ivy I am going to follow Brooks because something is off."

After following Brooks into the woods, the magic realm, and not being able to get out, Amber is resourceful:

It's getting darker and I am getting scared because I hear animals like bears, wolves and wild dogs. A bird catches my eye. I think to myself, what if I climb up a tree to be safe from wild wolves and bears?

When making it back to school on the day of the singing competition, and going up to the stage, Keisha tells of her character's emotions by expressing them in a physical form: "It's my turn. I'm walking up the stairs and I have butterflies in my stomach." Descriptions of a character's emotions through physical reaction were found in several other texts in Studies B and C.

The villain – Brooks. Brooks' character is cast as a villain of the story. Her role is the one of the evil queen in the classic *Snow White* and of the mother in *Bianca and the Six Robbers* (the *Snow White* version I read to the class). Here is how the student Brooke, writing in character, describes herself:

My name is Brooks and I have a secret. I have special powers that I got from my mom (passed on to me) and I live in the woods. I am a witch and I have a wart on my nose that is the colour of my skin. I use my powers for bad things. When I do not like people I put a spell on them. I don't like people because people make fun of me and I want to make them suffer. They say things like "you smell" and "why do you wear the same clothes every day and how do you wash your clothes?" "what's that thing on your nose." I don't know why they make fun of me?... The girl that I want to suffer the most is Amber because she can sing better than me and when she sings it makes me want to blow steam. And then she will pay for what she has done. Muah ha ha ha ha ha ha ha!!

There is plenty of background information Brooke provided in her character's telling that makes the reader almost empathetic towards the villain in the story. Brooke created a contemporary witch but retained a few traditional markings. There is a wart on the witch's nose and she wears

black but the clothes are jeans and a t-shirt. *Brooks* really wants to win the competition so she makes a potion in her house in the woods to destroy *Amber's* voice using a chant:

Gooley, Patooley.

Gargle Monsters

Come out and rise!

Make Amber sing horrible.

Now rise my blue bottle!

In true fairy tale fashion, the villain *Brooks* gets punished by her own wrong doing when she unknowingly drinks her own potion at the end of the story:

I start to sing and it sounds good... and then all of a sudden my voice sounds horrible!

My throat feels nasty and slimy. I burp and flies, frogs and mice come out of my mouth!!

And I am just like, "What's happening? I am supposed to sing beautifully and Amber is supposed to sing horribly!" I run off stage covering my mouth. What happened to me?

The mystery is retained throughout her story, and the reader/ viewer needs to proceed to other characters' stories to figure out what really happened. Interestingly, the student writing from the perspective of *Brooks* insisted that she act out a scene where she *does* become a winner of the competition and receives a medal. That is how much she identified with her character! We filmed the scene where *Brooks* is declared the winner and hyperlinked it in the e-book as a 'dream sequence' at the end of *Brooks'* story.

The accomplice – Ivy. Ivy is portrayed as Amber's loyal friend. She innocently passes the villain's potion to Amber, not thinking much of it. Later, when Amber tells her she will follow Brooks, Ivy is concerned about Amber's well-being and says, "... be brave but make sure you are safe." The next day, when Amber is not in school, Ivy relates,

I immediately thought Brooks did something bad to Amber. I go back to sit down and I keep on thinking about Amber. when Amber finally came to school... I was scared and happy. Scared that Brooks had done something bad to Amber (maybe she is not the real Amber) or maybe the same. But I was happy that she came back and I couldn't wait to ask her what happened.

Helpers/ the unusual creatures – Birds. In the *Snow White* story, the 'unusual people' come in the form of seven dwarfs, while in the version of the story I told the students they are seven robbers. They provide the heroine with a shelter, a place to hide temporarily. In the students' story, birds are cast into this role. Jada tells us: "I am a pink bird... and my name is Lovely. I have magic powers. I sing every day with my family. Me and my family like to help people and we also are very kind." When Amber feeds the birds with crumbs from her BLT sandwich, Jada writes: "...the girl started to give us food that tasted very good. ... the stuff was very different from what we usually eat e.x. nuts and seeds and insects... me and my family thought that the girl deserved something in return." At the end of Jada's story, the bird reflects:

We are so sad the girl has to leave because she is very nice to us and it is our first time that we have friends out here in the dark forest. We hope she got to the concert in time. We really hope she comes back sometime again cuz this is the first time that we got a visitor that's not going to eat us!!

Prize giver – Ms. Penelope. In Propp's terminology, this narrative role is called 'prince' or 'princess'. Symbolically, 'prince' or 'princess' is the prize at the end of the hero/ine's journey. It is the achievement of higher social standing and/ or the hero/ine's maturity by attaining human love. In the students' story the 'prince' or the 'prize giver' is the teacher, Ms. Penelope, who crowns Amber as the winner of the singing competition. Jada in her Ms.

Penelope role tells us: “I am caring and nice towards my students because I let them have competitions with their classmates which helps them in their singing & makes me happy. I love all my students...” Ms. Penelope feels bad after telling Brooks that Amber is the best singer in the class: “I didn’t want to say it to her because all my students are the best but she kept on asking so I had to tell her – but I didn’t want to. Well hopefully she won’t stay mad.” After Brooks’ disastrous performance at the competition, Ms. Penelope reflects: “I said “Brooks are you ok?” She did not answer me...I wonder if Brooks will come back...Is Brooks mad because of what happened on the stage with everybody saying boo boo boo?” In both stories Jada wrote, from Bird and Ms. Penelope perspectives, her characters are concerned with the well-being of others.

Summary. As previously noted, the students’ stories were coded for a number of characters’ reflections and emotions. Coding of reflections adhered to the definition in the *Merriam Webster Dictionary* as, “a thought, idea, opinion or a remark made as a result of meditation; consideration of some subject matter, idea, or purpose.” For example, in the character Brooks’ story, the sentence, “I don’t like people because people make fun of me and I want to make them suffer”, counted as one reflection. Characters’ emotions coded were expressions that appeared in the text such as, “I am so mad...”; phrases such as, “...makes me happy”; emphasis in font sizing, for instance, “...one of my students is not here AMBER!! AAAAAHHHHHHH!”; and emotions expressed by onomatopoeic words in a sentence, such as, “My evil plan finally worked...muhaha!” Also counted as points were the students’ expressed emotions in videos that were manifested in their body language while acting in-role.

Table 1

Study A With Digital Technology: Number of Emotions and Reflections in Characters' Stories

No. of Scenes	Word Count	Student's Name	Story Character	Total Emotions	Empathy	Total Reflections
10	742	Brooke	Brooks	16 (9 in text + 7 images)		19
14	871	Keisha	Amber	13 (10 in text + 3 images)	2	20
7	585	Iris	Ivy	8 (6 in text + 2 images)	5	16
13	1104	Jada	Birds + Ms. Penelope	11 (9 in text + 2 images)	9	25

The highest word count and number of reflections was contained in Jada's writing, as the student appeared particularly sensitive to the well-being of other characters. The highest number of emotions showed in Brooke's story of the villain, Brooks. Interestingly, the emotions were to a large extent expressed through the student's video acting, as the student considered writing very difficult. Brooke stated in the interview, "I liked that I got to act. It helped me get ideas out without having to just write." The smallest count of emotions is contained in the character Ivy's story which was partially due to the fact that the student writer was absent during several of the sessions. The effect of transmediation was an increase on average of 3.5 in the emotions count per student.

Study B

Background: creating the baseline of a story. The participants were 16 students, 12 girls and 4 boys aged 10 to 12 years and were selected for the project by the school principal from grades 4, 5 and 6. In contrast to Study A, the students in Study B were proficient in reading and writing. During the first session, while using the same sample tale and similar type of questions as in study A for creating a new story, an unexpected thing happened. The older girls in grades 5 and 6 *hijacked* the story and made it all about relationships. The girls were deeply engaged, argued passionately among themselves about what was happening in the story and what would happen next. It was stunning to observe. The story was very realistic, set in a High School and a food court in a shopping mall across the street. There was no magic in the story and it seemed to be diverting from the guiding story's map, but I did not interfere. At the same time, I noticed that the boys were not participating, looked bored, and were not engaged. Afterwards, I discussed what happened with the teacher.

At the start of the second session, we asked the students if anyone would like to make a different story in response to what we perceived as a lack of engagement from the boys. All four boys and 1 girl, who was absent during the first session, raised their hands. As we could have only 4 students in a group, one boy volunteered to stay with the original story. During the later part of the session, the group consisting mainly of boys, invented a different story from the same model tale structure. The story had a medieval setting, knights, swords, a wizard and a dragon in it. This time around, the boys were really engaged in creating their new story and excited and happy with the result! As a consequence, there were two different stories the students invented in Study B. Three groups of students worked on the story set in High School and one group on the story set in Medieval Times.

Synopsis and template of the class-created story B a) - *The High School Madness*.

Ana finds out that Sydney (the most popular girl in school) is going out with Zach, and she is jealous of her. She wants Sydney to be expelled from school. Ana makes a plan and tells Steven what to do. Steven tells Sydney to go to school at night for a meeting. Sydney is caught trespassing by the janitor. She is called to the Principal's office in the morning but only receives a warning. When Ana finds her plan didn't work, she makes a second plan ... to embarrass Sydney on *social media*. Sydney and Zach go to the mall, followed by Ana and Steven. They take photos of the couple and on a school computer they *Photoshop* the pictures, replacing Zach with Steven. These photos appear in the school newspaper. Everyone then thinks that Sydney is "cheating" on Zach. When the Principal finds out that Ana and Steven have been using the school computer for *cyberbullying*, she expels them from school.














SYMBOLS OF PROPP'S ACTIONS	CHARACTERS:	ANA	STEVEN	SYDNEY	PRINCIPAL	ZACH
 1. Initial situation	Scene 1 Introduction: "About me"					
 4/5. Villain asks question, gets the information	Scene 2 Ana finds out that Sydney (the most popular girl in school) is interested in Zach. She is jealous of her.					
 6. Villain tricks the hero, assumes a disguise	Scene 3 Ana makes a plan; tells Steven what to do; she wants Sydney to be expelled from school.					
 7. Hero/ine is fooled	Scene 4 Steven tells Sydney to go to school at night for a meeting.					
EMERGENCY	Scene 5 Sydney is caught by janitor who informs principal next day that she was trespassing.					
 2. Request or warning to the hero/ine	Scene 6 Sydney is called to principal's office. Then, the principal talks with Steven.					
 /5. Villain asks question, gets the information	Scene 7 Ana finds out her plan didn't work.					
	Scene 8 Ana makes 2nd plan: to embarrass Sydney on social media.					
	Scene 9 Popular kids (Sydney and Zach) go to a shopping mall. Ana and Steven follow them. Ana takes photos of Sydney and Zach.					
	Scene 10 On a school computer, Ana and Steven photoshop the picture and replace Zach with Steven.					
 7/8. Hero/ine is fooled	Scene 11 The photo appears in a school newspaper. Everyone in school thinks Sydney is cheating on Zach.					
 28. Villain is exposed	Scene 12 The principal finds out that Ana has been using the computer for cyberbullying					
 30. Villain is punished	Scene 13 Ana and Steven are expelled from school.					
	Scene 14 Sydney and Zach don't talk but are still together. Zach and Steven are no longer friends					
	Scene 15 Afterword					

Figure 4. Template for Study B a) story - *The High School Madness*.

Synopsis and template of the class-created story B b) - *Brothers in Arms*.

Jarod is jealous because, the Queen, at a ceremony, announces that the best fighter is Thomas. Jarod bribes the Wizard to cause an accident where Thomas will break his arms. The Wizard summons a rock to fall on Thomas but makes it become a pebble. The Wizard tells Thomas to run away. In the forest, Thomas encounters six Knights on horses and tells them he was chosen by the Queen. The Knights ask Thomas to prove that he is a good fighter by killing or taming a dragon. The Knights then reward Thomas by asking him to be their seventh. Jarod is told by a spy that Thomas is alive and has joined a group of Knights. He attacks Thomas and the Knights in the woods. Thomas is injured and two Knights are killed. An injured Knight crawls to the village and tells the Queen where Thomas is. She sends the Wizard to heal Thomas and to give him an ancient powerful sword. Thomas returns and defeats the bad knights. Jarod is put into the dungeon and Thomas is made the leader of the Queen's Knights.















SYMBOLS OF PROPP'S ACTIONS	CHARACTERS:	JAROD	WIZARD	THOMAS	KNIGHTS	QUEEN
 1. Initial situation	Scene 1 Initial situation Introducing yourself 'Something about me'					
 4/5. Villain asks question, gets the information	Scene 2 Jarod is jealous because at a ceremony, the queen announces the best fighter is Thomas					
 6. Villain tricks the hero, assumes a disguise	Scene 3 Jarod bribes the wizard to cause an accident so Thomas will break his arms					
 7/8. Hero/ine is fooled and taken away	Scene 4 The wizard summons a rock to fall on Thomas; it becomes a pebble;					
 9/10. Hero/ine goes or is sent on journey	Scene 5 The wizard tells Thomas to run away and find another village; Thomas walks into the forest					
 11. Hero/ine meets magical or unusual people	Scene 6 Thomas encounters 6 knights on horses in the woods; They tell him they need 7 th to join them; He says he was chosen by the Queen					
TEST 12/13. Hero/ine is tested for kindness and help	Scene 7 Knights ask Thomas to fight or tame a dragon to prove he is a good fighter					
 14. Hero/ine is rewarded	Scene 8 The knights reward Thomas by giving him the dragon and they ask him to join them as the 7 th one					
 Repeat move - 4/5. Villain asks question, gets the information	Scene 9 Jarod is told by a spy that Thomas is alive in the forest and with a group of knights					
 6. Villain tricks the hero, assumes a disguise	Scene 10 Jarod plans to attack Thomas and the group of knights					
 16. Hero/ine confronts the villain (or his accomplice)	Scene 11 Jarod and bad knights ambush Thomas and good knights in the woods					
 17. Hero/ine is wounded	Scene 12 Thomas is injured by an arrow and 2 knights are killed; only 5 members of the group are left					
 23. Hero/ine is unrecognized	Scene 13 Injured knight crawls out to the village and tells the Queen where Thomas is. She sends the wizard to heal Thomas and give him powerful ancient sword					
TASK Or TEST 25/26. Hero/ine undertakes test or task. The test or task is accomplished	Scene 14 Thomas returns with 4 remaining good knights and they fight the bad knights in the stairwell of the Queen's castle					
 30. Villain is punished	Scene 15 Jarod is put in dark dungeon until he dies					
 27/31. Hero/ine is recognized, rewarded	Scene 16 Thomas is rewarded by the Queen					

Figure 5. Template for Study B b) story - *Brothers in Arms*.

Writing from the Characters' Perspectives; Description of the Classroom Process

Writing with digital technology. In the next session, the students were provided with computers and instructed as to how to create their own files and how to get connected within their group's project. As in the previous Study A, there was no storyboarding done ahead of writing. The students worked from the visual template of the story that provided them with guidance for writing from each character's perspective.

Most of the students did not have any problems writing from their characters' points of view, except for two grade 4 students, Eric and Victoria. Those students needed one-on-one help to stay in character. All students typed independently on their laptops, working scene by scene. I monitored the students' writing when I logged into their files on my Mac computer. This was our first session when the students started to write and at the end of it, several students had already finished all of their characters' storylines. Most of the students were good and confident writers. Several girls wrote many pages of text, particularly in the introduction of their characters – developing their characters' personas, telling a backstory, talking about their characters' families, etc. The students used typography with intent in their writing: bigger font sizes and capitalized letters for emphasis; and onomatopoeic words, word abbreviation and emojis for emotional expressions. I asked the students where did they learn to do it and they told me they knew it from reading comics.

Despite their interest and ability to manipulate the visual elements of fonts, many students did not use punctuation at all so it was hard for me to understand what they were saying. I suggested that the students who finished all their characters' scenes should start revising. When I entered my comments into their digital files, the students did not respond or just clicked on the comments as *resolved* but did not make any changes. As in study A, it appeared that once

their text was written, it was final for them. I was told that in the classroom, their teacher marks spelling mistakes (sp) on their papers and they just fix that particular word. They do not revise.

Collaboration. Even though the students were told at the start of the project that they were required to discuss the story's details with the members of their group, discrepancies in their stories started to show up. The students did not share their writing with each other or check their group members' stories in their digital files, even when it was easy to do. They were charging ahead, writing their own thing and going their separate ways. Collaboration among the students through digital means did not seem to exist. For example, Zoe and Tiffany in the same group wrote very interesting and detailed scenes in their stories but their narratives went in totally different directions! I talked to these students about it, asked them to look at each other's stories but neither of them implemented any changes. Only at the end of the project, after I insisted that the students needed to make their story work together so it would make sense, did Tiffany read Zoe's text and hesitantly agree to rewrite her own story so it would fit. As Tiffany was a particularly good writer who wrote many pages per scene, I realized how hard it must have been for her to discard what she had written, and do it all over again.

Students' engagement. One Sunday evening, two months into the project, I logged into the students' files to see if there were any additions to their stories. I could see that Zahara was working on her story at that very moment and the words she was typing were appearing simultaneously on my screen at home. She was unaware that I was watching her write. I was witnessing a real engagement – the student working and improving on her story, by her own initiative. Even though the participation in the project was voluntary, there was no deadline and no marks to be received. Zahara was developing her story much further than I could even imagine; she kept adding to her text, made a digital collage of images and created her own school

newspaper within the story. She was building her character's *world*. What was even more impressive was that Zahara was writing from the boy's point of view. In another student's file, I noticed a comment posted by a member of her group; a suggestion about how to improve her story. This was the first time I saw an attempt at collaboration among these students through the use of digital technology. Nevertheless, the other student did not respond to the posted comment but it gave me hope that in time, perhaps some digital collaboration among students may be possible.

Enriching the story with multimodal elements. Judging from the amount of writing the students did, for most of them the writing was their preferred mode of expression. When I asked the students if they could draw some pictures for their stories, the students pulled back and said they could not draw. Only 1 student out of 16 participants in this study admitted that she liked to draw. Granted, the story the students invented about high school and a shopping mall was not very conducive to the creation of images; it would be a great challenge to make such pictures funny or interesting. Regardless, these students really needed prompting and encouragement to express themselves in other modalities.

To pique the students' interest, it was suggested that for the introduction of their stories the students could create digital avatars for their characters' portraits. Some of the students' groups started immediately to create them. Other students went to look for images on the Internet. They all seemed to be involved, talking among themselves, looking on their computer screens. After a while, I asked one of the students if he needed some help. "No, thank you," the student replied as he scanned through the sites on the Internet, and sang to himself. After the session, I looked into the student's file to see what kind of images he found. There was nothing. Left on his own, the student had lost his focus and had forgotten what he was looking for.

Support. Throughout this part of the project, I walked from group to group and engaged them in a discussion of how they could enrich their stories with images and sound. Interestingly, several students used enlarged emojis in their scenes as the ‘added images’ and many of the students already indicated sound in their text by the usage of onomatopoeic words and typography. I tried to encourage the students to at least attempt to make their *own* drawings or take their *own* photographs. It seemed to be falling on *deaf* ears. I asked Zoe, one of the students about it, and she asked, “What about if I don’t like how I draw?” I told her the point was to express visually what she meant and she could draw stick figures, as far as I was concerned. Zoe took it to heart, and produced some drawings, as well as took her own photos in a shopping mall. The drawings told her story and it was unlikely she would have been able to find anything close to what she had produced from her imagination on the Internet.

During the last session with one of the groups, I asked Victoria and Tiffany why they did not add *any* images to their stories. “I can’t draw,” Victoria replied. When I asked her to at least try, she went to the computer and told me she needs to find the eyes for her character’s portrait on the Internet. I brought her a sheet of paper and asked her to sketch the character by hand. In no time Victoria drew a charming cartoony picture. Even though it did not match her written character’s description, the point was that she *could* draw. A similar encounter happened with Tiffany who told me she does not like how she draws. “In that case, why don’t you find some images on the Internet?” I asked her. “I don’t like to take things from the Internet”, Tiffany replied. “I feel like I would be stealing something!” Interestingly, it was the student’s moral stance that prevented her from including digital images. However, when I encouraged Tiffany to attempt drawing, she *was* able to produce two sketches.

In contrast to the first story set in a high school and shopping mall, the second story created about knights and a dragon had a great potential for the creation of images and sounds. I suggested to the group that worked on the story that they should think of some sound effects they could put into it. The boys got excited and searched through the Internet sites to find them. They played the sounds and showed the teacher what they found. Sadly, the teacher told them they could not use those particular sounds and reminded them that they could only look at sites where the material is free of copyright and free of charge. In addition, the teacher had to show the students several times how to copy the links to the material they found, and bring it into their digital files so it could be edited later. The procedure took away a lot of time from the session that could have been used for creating new and original material.

Green screen – videos. The green screen videos were done during the last week of school, with one group at a time. Two morning periods were devoted to each of these sessions. The videotaping with green screen was far more complicated and time-consuming than the videos made at the beginning of the project, where the students just acted the scenes in order to understand what each character was doing. This time, several *takes* of each scene had to be made, in order to fit them within the background image selected. It required a lot of testing and endless adjusting of the green fabric.

Surprisingly, all students paid full attention during the videotaping, displayed patience, and helped with all the costumes, hair, props and green fabric adjustments. As the scenes were performed, the teacher was showing the rest of the students how to film it on the iPad so they could do it themselves. Thus, all students were involved and engaged in the process. Acting out the scenes was literally *stepping into the story*. As there was no script to be memorized and rehearsed, the students had to *become* the characters they invented and act that way.

Anyone familiar with the method of movie making knows that it is not a straightforward, linear and continuous process where the actors just perform the story. It is filmed in separate scenes, and there is a long time of waiting in between the *takes*, where there is nothing exciting happening; the set has to be adjusted, the actors' costumes rearranged, their make-up touched up, the camera reloaded and so on. Yet, the bystanders don't seem to be bored. They seem mesmerized and they stay engaged. They are caught in the *movie magic*. Similarly, during the videotaping the students were focused and *present*, even during the pauses between the *takes*.

In one of these *intermissions* when the teacher was trying to resolve technical problems with the iPad, I asked the students if they could create something to show how the character Ana in their story feels about Zach, the boy she had a crush on. The girls started doodling together on a piece of paper, and in a couple of minutes spontaneously created a sheet of notes that was very telling of that character' state of mind. During the last session with another group, while the teacher was setting up for videotaping, I asked the students to come up with a title for their story. One student suggested *The High School Madness*. It struck a chord with the whole group. "Yes!" they all exclaimed. Two of the girls started chanting the title and doing some step choreography to go with their chant. They laughed as they were making up words to their song. I was astonished. It was like watching a number from a musical! The girls were playing, improvising, being in a *creative flow* (Csikszentihalyi, 1975).

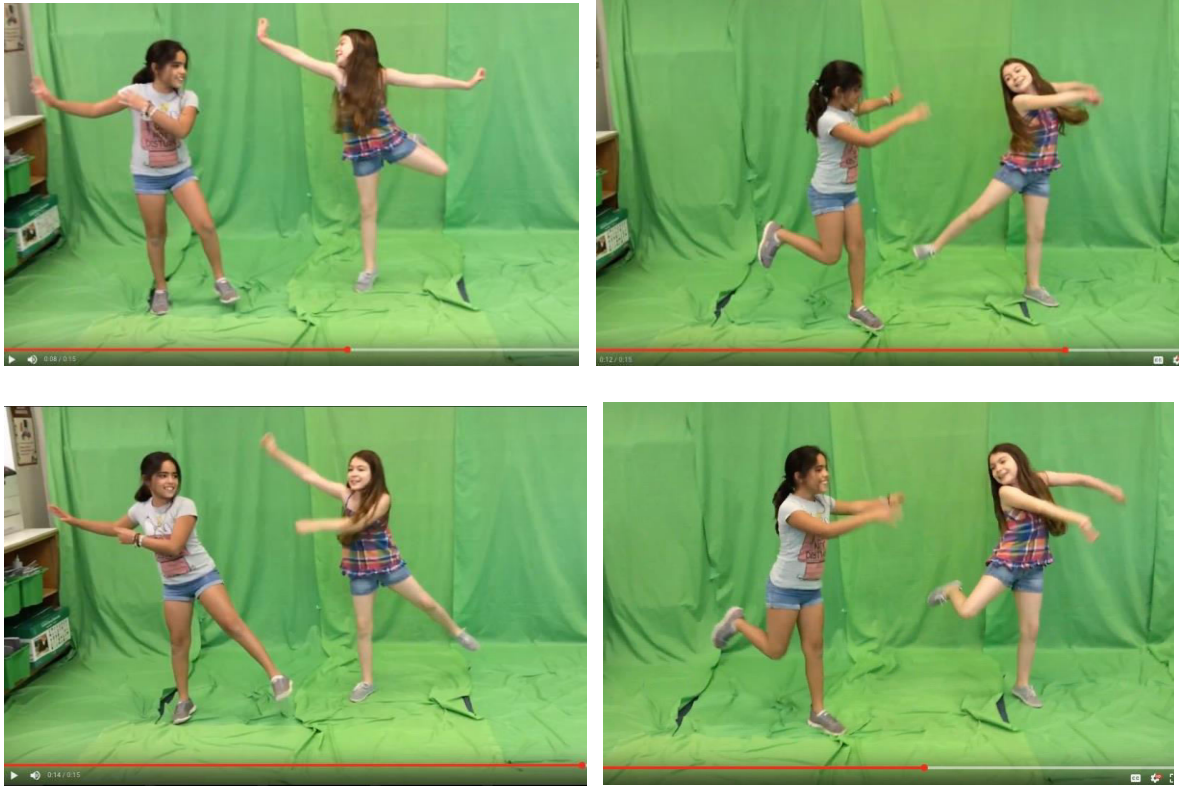


Figure 6. Students improvising their song and dance number.

It was almost as if they had shifted into another gear. Every time the students did their number, they improved it and developed it further. They finalized their steps and motions, synchronizing their movements together. This was what I was hoping and waiting for during the entire project – spontaneity, originality and creativity; but now the sessions were over and there was no more time. Both of the noted creative moments, the making of a collage and the musical dance number, were a result of interaction with other students. There was no digital technology involved. It happened as the students were feeding and receiving inspiration from each other. The students’ creativity appeared to be a result of a spontaneous, unstructured, collaborative play.

After the project was finished, one of the students commented that the story the class created didn’t seem like a fairy tale because there is no magic. “What is magic?” I asked the

students in the interview. “Something that does not happen in real life,” the students said; “Something mysterious that you can’t explain”. “Do you know how to *Photoshop* the picture on a computer?” I asked. The students had no idea. It was a mystery to them. If we consider a *computer* being, in psychological terms, a transitional object and computer-mediated communication as an entry into another realm (Murray, 1997), then the story the students created contains magical elements after all.

Study B a) - Narrative Analysis of the Story - *High School Madness*

The class-created story was retold from the characters’ points of view by three groups of students. The perspective taking gave the students the freedom to invent unique characters of their own and to express their personal vision of those characters both in texts and images. Consequently, there are three portrayals of each of the characters in the story, as interpreted by individual students in each group. There are five characters in the story: Ana, Steven, Sydney, Zach, and the principal, Ms. Gackowitz. The story is centered on interplay between two student couples in High School. There is a relationship between: Ana and Sydney; Ana and Steven; Steven and Zach; Zach and Sydney, and a one-sided relationship of Ana towards Zach. At its core, the class-created narrative is a love story, as seen through the eyes of 10 to 12-year-old girls.

Perspective taking: Introducing characters.

The villain – Ana. *Ana*’s character is cast as a villain in the story. She is a manipulator and her actions drive the story forward. During the story creation, it was stressed that the object of jealousy cannot be the same as in the story I told the class, where the mother is jealous of her daughter’s beauty. The students have decided that the *Ana* character is going to be jealous

because the *Sydney* character is the most popular girl in school. Still, the importance of *looks*, one's external appearance, shows prominently in the students' writing.

According to the students' telling, *beauty* makes one popular among peers. Strikingly, some students associate beauty with plastic surgery procedures. For example, Laura writing in character *Ana*'s voice says, "I am 16 years old... I am gorgeous. I won a pageant. My dad is a plastic surgeon P.S. No one knows this but I did 3 surgeries on my nose and two lip injections." Similarly, Tess tells us, "Like omg look at my features! I get free surgery whenever and wherever I want to. Oh btw my mom works for mac so I can get all the makeup I want."

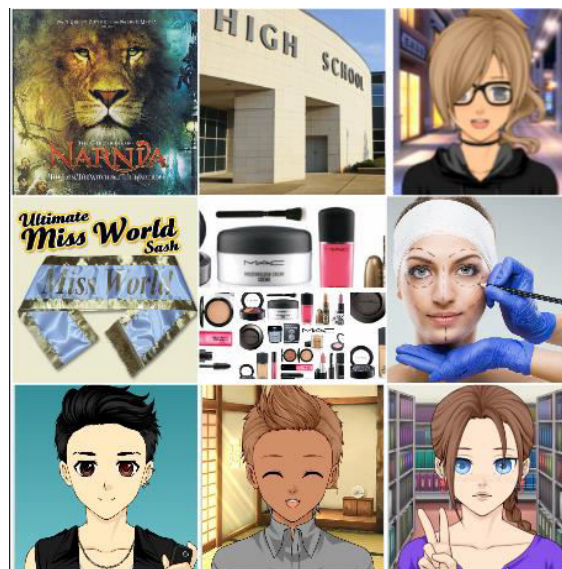


Figure 7. Student Tess' collage representing *Ana* Character: top left to right – *Ana*'s favourite book; *Ana*'s school; portrait of *Ana*; bottom left to right: *Zach*, *Steven* and *Sydney*.

In contrast, Zoe portrayed *Ana*'s character differently:

People may say I am emo maybe goth but I would say I am more of the dark j-goth type.

One thing you should know about me is I hate school. I hate the fact that we follow the pyramid system that there is that one popular kid and we all live to serve that person. It

sucks my life, sucks this world, sucks. I pretty much have no friends and my mom is worried about me.



Figure 8. The loneliness of Ana (green figure) in school as expressed by Zoe in her drawing.

What does Ana want? As the students said during the story creation, “Ana wants Sydney’s life.” She wants to be popular but most of all, Ana wants Zach Martin, the cutest boy in school and currently Sydney’s boyfriend, for herself. Zach, in Propp’s terminology, is the *prize* and is cast in the role of *prince* in the story. By getting Zach for a boyfriend, Ana would gain popularity in school, (that is a higher social standing), and attain love in a relationship.

Laura writes:

I have a huge crush on Zach. Sometimes I try to talk to Zach but I end up fainting. That's why I guess he thinks I'm a total loser that has no life. I have many expectations in life like being rich and getting married to Zach. I really hope that happens... I just really get obsessive over Zach, he's my life! I have a collage of him in my closet.

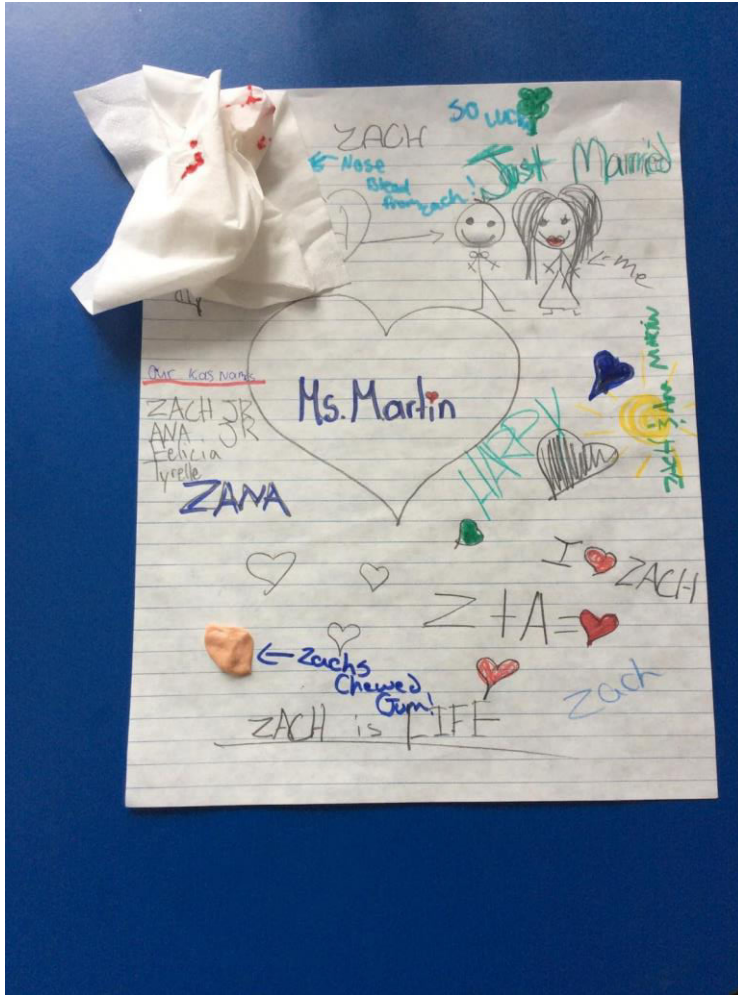


Figure 9. Collage expressing Ana's feeling for Zach. We see saved tissue with Zach's nose bleed, picture of the married couple and the names of their future children.

Similarly, Zoe shows Ana's infatuation with Zach in words and drawing, addressing the reader directly:

... the only thing I love in life is Zach. I have a shrine of him in my room and a cardboard cut-out of that I hug at night. And don't call me CRAZY like my older sister... ugh so happy she is in modeling school.



Figure 10. Ana's shrine of Zach. In the illustration, we see Ana's collection of Zach's related items: Zach's sweat in a glass; Zach's old shoe; Zach's hair in a jar and an assortment of his photographs.

As Sydney seems to be the obstacle standing in Ana's way, Ana devises a plan to get Sydney expelled from school. She engages Zach's best friend Steven as an accomplice to carry the plan out because she knows that Steven likes her.

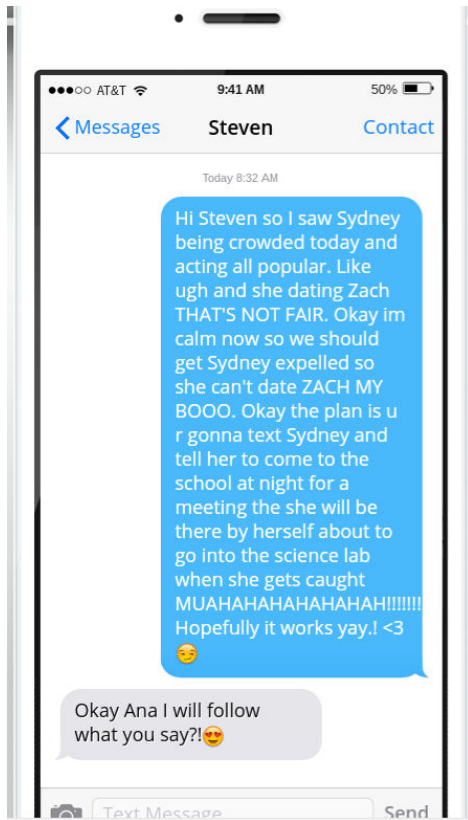


Figure 11. Screen capture of Ana's text to Steven as created by student Tea.

The accomplice – Steven. In the classic *Snow White*, the accomplice is a huntsman who is ordered by the Queen to take Snow White into the woods, and kill her. In the version I told the class, *Bianca and the Six Robbers*, the accomplice is a kitchen boy who is asked by Bianca's mother to shut Bianca in a wooden shack by the seashore. Both the huntsman and the kitchen boy oblige the order but display empathy towards the heroine and let her go while pretending that the task was carried out. The accomplice's role is small but important, as it makes the villain appear innocent if the plan works or proceed with another plan if it does not.

In the story students created, the accomplice's role is played by Steven. Even though Steven is Zach's best friend, he harbours feelings of jealousy towards his friend. It bothers him that everything is easy for Zach: getting the latest fashion sneakers and electronic gadgets

(obviously Zach's family is well-to-do) and that all the girls in school have a crush on Zach, including Ana, the girl Steven likes. Once again, the character role provided the students with an opportunity to create their own unique characters according to their personal vision. I was curious how this character would be developed further and whether 10 and 11-year-old girls would be able to assume a persona of a 16-year-old boy and talk in his 'voice'.

Zahara, who wrote from *Steven's* perspective made meaning for herself by referencing the world we live in and popular culture:

My Mom...works at Best Buy. My Dad... works at a Jordan's store. I have a 12-year-old brother... and a little 6 year-old sister... who loves "Dora and friends into the city" show. Sometimes I have to babysit my brother and sister on fridays and wednesdays while my Mom and Dad work a next shift. I have a lot of interests:

- One is playing basketball and football **LET'S GO KNICKS LET'S GO! And LET'S GO GRANIT LET'S GO!**

- The second is music. I like to listen to classical music **AFTER** and sometimes before basketball and Football practice ...it calms me! **DO NOT tell ANYONE!** The next music I like is rap like Drake songs the clean kind.

- The third and last is the ocean and ocean animals. I could be sitting in class during a test and just start thinking about the ocean for no good reason.

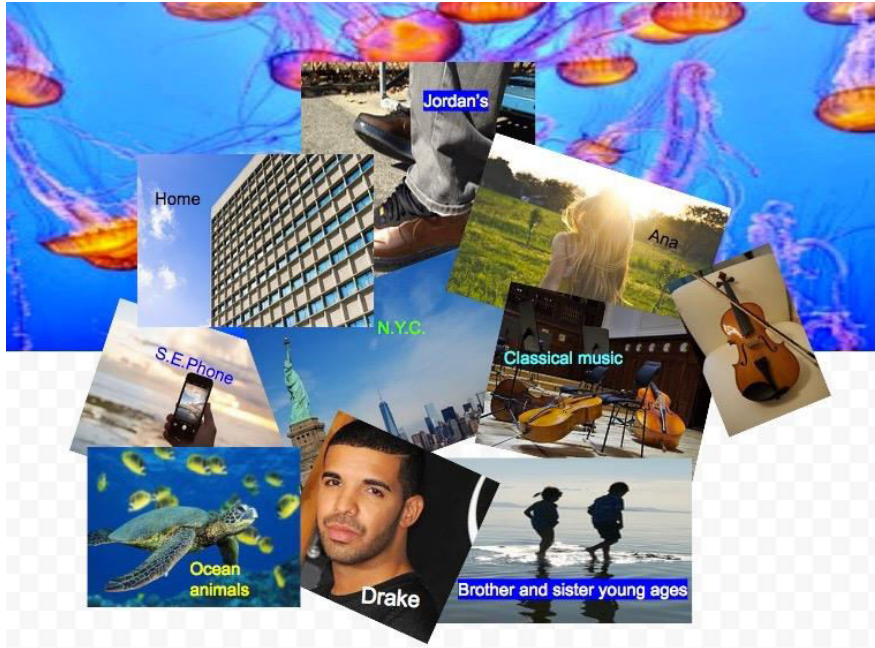


Figure 12. Digital collage of *Steven*'s interests.

When I asked Zahara what it is like to write from a boy's perspective, she told me that, "boys are simple. They like sports, music and video games." Still, she made her character *Steven* quite a conscious and complex character: he realizes that listening to classical music is a bit out of line with his peers and feels embarrassed about it. *Steven* privately confesses to the reader and asks the reader to keep the secret. By 'thinking about the ocean during class time', Zahara indicates that *Steven* is a dreamer, a poetic soul.

In contrast, *Steven* as written by Tiffany, exhibits a very different personality:

My parents divorced when I was 4, so I live with my mom. I still remember when my dad left. He told me he had to go get something for my mom, but he hadn't come back in weeks. That's when my mom told me that my dad left us. I remember seeing the pain in his smile every time we played in the backyard, pretending to be happy. I have no idea about my dad's whereabouts. Maybe he has a family of his own, one that he loves...

Sorry for having to listen to me ramble on.

Not only that his father left him but as *Steven* tells us, “I also used to have a dog but he ran away.” Tiffany’s *Steven* appears to be down on his luck.

The heroine – Sydney. Sydney is *Snow White* or the *Bianca* character in the story version I told the students. She is the *innocent*, thrust into the events by other characters’ actions and unaware that her presence is causing jealousy and anguish in the villain’s mind. In the students’ story, Sydney is a good student, popular with her classmates and she is dating Zach, the cutest boy in school and a captain of the football team.

Sydney considers herself to be pretty and references a current body image and the use of cosmetics to enhance her appearance: “I use two eyeliners a week and 3 tubes of mascara. My face is smooth because I always use clean and clear to keep it beautiful. The body I have is so perfect and slim. NO curves for this girl!!” However, at the age of 10, the student writers show the ability to see that there is more than meets the eye. *Sydney* may be perfect and popular among her classmates but her life is far more complicated. All is not as it seems. There is much more going on in *Sydney*’s life that is not easy. Charlize writes:

I’m a total diva on the inside but on the outside, I’m a goody two shoes. The only reason that I am popular is because my parents have the best jobs and I have all the new products by Apple and Coach. I’m a Straight A student and I go to volunteer at the hospital every weekend. That’s why I get the flu a lot.

Isadora writes:

I have two siblings: Eric, my younger brother is ten and Jayla, my younger sister is 13. I have so many friends and anything that I do everyone else wants to do too! It's like I am a celebrity!!! It’s like I am in la la land but then the bell rings and reality hits me. First, I take the subway to Eric's school, take him home, then call the babysitter. Then I take two

busses to Jayla’s hip hop studio. If my mom is working over time, I have to make dinner too but nobody knows this. I am the popular girl at school but at home, I am a minny mom. It's even worse if i need to go to school after hours because then i have to call a babysitter and tell them they need to come and do everything that I do. Good thing is my dad owns apple ‘cause the babysitter cost is \$300!

When both parents are working, the eldest child in the family has a lot of responsibilities. She has to help her siblings do their homework, pick them up from their lessons and sometimes even make dinner at home. Both students relate *Sydney’s* goodness’ by showing her selflessness, helping others (her family and siblings) and volunteering in hospital. Consistent with the ‘Snow White’ character, *Sydney* is unsuspecting of trickery and deceit. When she receives a text from *Steven* to come to school after hours to work on a Science project, she does not think much of it and obliges, as she is a conscious student:

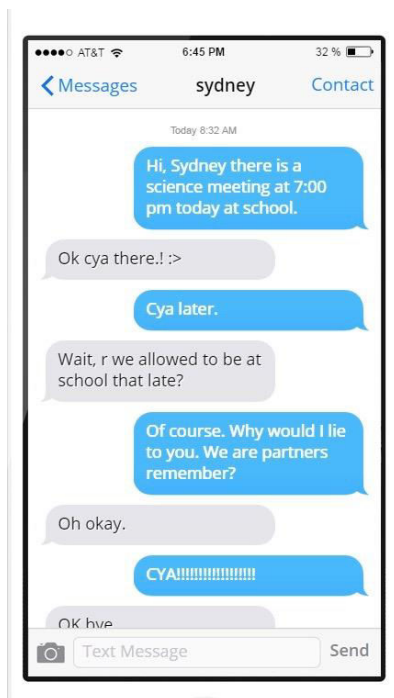


Figure 13. Image of the cell phone screen with the message.

Even after the crises hit and *Sydney's* life is turned upside down, *Sydney* is not able to fully grasp the villain's motivation because she, herself, is good and innocent: "Why did Ana do those things to me? Does she hate me?"

The prize – Zach. Zach appears in only 6 scenes of the story. He has a passive role through most of the story and is happy with his life. Just like *Sydney*, the girl he dates, he is unaware that his looks and social standing (as a captain of the football team) and having the latest electronic gadgets and fashion accessories create resentment and jealousy in his best friend Steven. He also seems to be blissfully ignorant that he is the object of Ana's desire. Ana is not on Zach's spectrum. Only after Zach sees the photo of *Sydney* with his friend Steven in the school newspaper, is there crisis in his life. Zach's reaction to the crises becomes a pivotal point of the whole story and leads to the story's ending.

Zach's character and his storyline are the least developed among all the participating characters. There could be several reasons for it. The students who wrote from Zach's point of view also wrote from the perspective of the principal. (Both characters had smaller roles and appeared only in about half of the scenes as opposed to the other characters in the story.) Coincidentally, the students who wrote the Zach story were absent throughout several sessions so they did not have enough time to develop the character further. Also, the character of Zach is passive, does not do much until the end when the crises hit.

The way students portrayed him, Zach likes sports, video games and music. For example, Maya writing in *Zach's* character writes, "I like System of the Down and my favorite song from them is 'Chop suey'. Metallica is my other favorite band. My favorite song from them is 'Enter sandman'." Adele, another student, portrayed *Zach* as a more complex character:

Hola! Je m'appelle Zach. I am 16 years old. I am multilingual which means I can speak loads and loads of languages including Spanish and French. I also am Heterochromia which means I have 2 different coloured eyes. I love my girlfriend Sydney more than I love Football, and that's saying something. My favorite singer is King Hallawae. You probably are like "Oh who's King Hallawae?" He's not big but he still is really good especially at making beats. If you search him up, you'll see why he's my favourite. Well, I've got to get to class. Later dudes

Adele assumes the boy's voice not only by referring to *Zach's* interests in sports and music but also by the use of boys' language, such as the word 'dudes'.

Helper - Principal Ms. Gackowitz. Similar to *Zach*, the principal's role is small in comparison to the other characters; she appears in only 6 scenes of the story. Her role fits Propp's character of the 'Helper', as the principal has to resolve the crises to restore the equilibrium in the story.

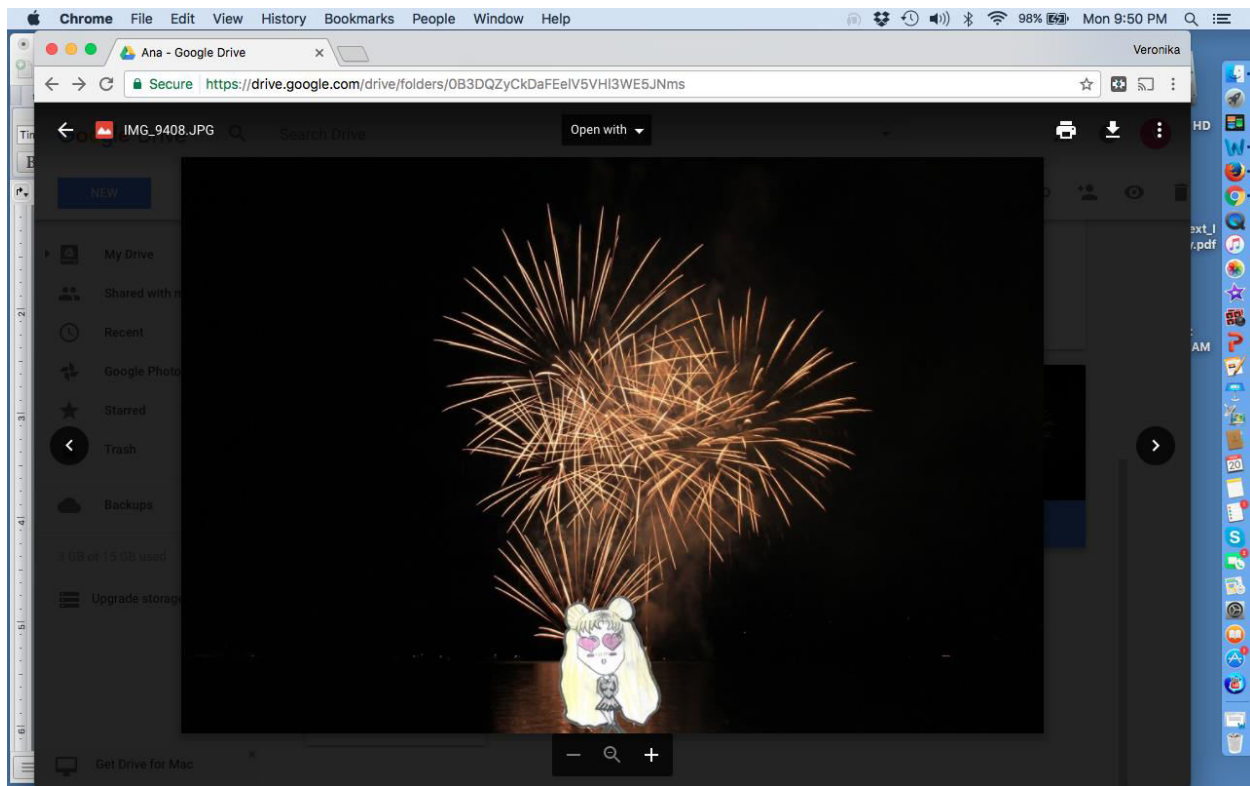
Adele almost paints the appearance of the *Principal Gackowitz* with her references to colours: "...dark red eyes; ... long tight dark mauve dress; ...black stilettos with rounded toe; ... iPhone 5s with a black lace designed case; ... dark smokey eyeshadow; ...dark red lip colour; ...pale complexion." The description of the principal feels almost sinister. Then Adele adds in her *Principal Gackowitz's* voice, "I love ordering kids around. It sounds like cruelty but this is how I relax myself." Maya, on the other hand, portrays the principal, *Ms. Gackowitz* with the use of cultural references to create a meaning for herself:

Some kids think that I'm tough but I think that I'm just a normal principal. I know the kids laugh at me because of my name... On my free time, I like to exercise and go to the

movies... My favorite book to read is *Game of Thrones*, my favorite movie is *The Book Thief*, my favorite restaurant is *The Keg*...

In the students' stories, there are numerous references to the world the students live in. The students name food outlets such as *KFC*, *McDonalds*, *Tim Hortons*, stores like *Bulk Barn*, restaurant *Red Lobster*, and show their familiarity with fashion brands, as they mention *Guess*, *Prada*, *Forever 21* and *BCBG* in their stories. When I related to the school principal what the topic and setting of the students' story was in Study B a), the principal told me she met some of the students in a local shopping mall over the weekend. It seems like the shopping mall is a place to meet friends, congregate and socialize.

Narrative playground. While the perspective writing gave the students the opportunity to create their own unique characters, it also provided them with a narrative playground to explore their own feelings and emotions under the mask of their fictional character. For instance, Zoe takes her character *Ana* on a different narrative path from the other two students writing from *Ana's* point of view. After *Steven* does what *Ana* ask for, and *Ana* feels victorious, thinking that her plan to get *Sydney* expelled from school succeeded, she invites *Steven* over to celebrate. She gives him a hug and is astonished by her physical reaction: "I felt fireworks and then I remembered *Zach*. *Zach* is the one I love, not *Steven*... I am so confused!"



Firework sound effect

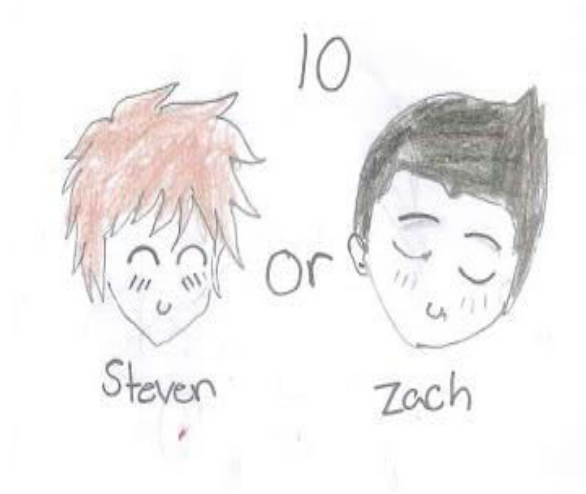
Figure 14. In the image, Zoe superimposed her drawing of Ana on a video clip and added sound of the fireworks to show how the character feels.

Is it possible to be attracted to two boys at the same time? Zoe writes: “Well I think at this point I don't know what I want... well I am sure this is what I want, I mean I have wanted this for years! Is it going to just end because of one boy?” In her description of the scene in a computer lab, Zoe injects her text with a romantic tension:

Steven starts posing for the pictures... He asks me if I can do Sydney's poses [and] somehow, he knows where to put his hands. As we go into the hugging picture, he leans in as if he was going to kiss me. I lean in but our lips don't touch. As soon as we were 1 mm away from each other, I pull away and say, ‘we're done’. I got the picture.

Later at home, Zoe's character reflects on what happened, relating her most intimate thoughts to an imaginary reader:

I wanted to kiss him but Zach, I know what you are thinking... why don't I just date Steven? He's nice, he's cute and I like him. But Zach - I have wanted Zach for years! It's hard for me to understand how can you just switch so quickly. I don't even know what it's like to like someone that is not Zach, the only person I have liked. Maybe I should make a pro and cons list:



Pros of Steven		Cons of Steven	
He's nice		HE IS NOT Zach	
He's cute			
HE ACTUALLY LIKES ME			

Pros of Zach		Cons of Zach	
HE'S IS Zach		He is full of himself	
		He is kind of mean to anyone who is not popular	
		HE DOESN'T LIKE ME	

Figure 15. Zoe's drawing and her list.

The figure 15 shows that the student engaged in her character *Ana*'s analysis.

Tiffany, writing from the *Steven*'s perspective, also injects romantic feelings into her text in a scene where *Ana* and *Steven* are photoshopping the picture of *Sydney* and *Zach* in the computer lab:

I tucked my chair right next to Ana's. When she turned her head, her hair hit my face.

Her hair smelled like a field of roses and cherry blossoms. One of Ana's hairs fell off. I glued the piece of hair on the tip of the pen I'm writing with.

This poetic description is particularly astounding considering that the writer is just 10 years old.

Reflections. The students were able to maintain their characters' persona throughout their stories, as seen in the characters' reflections. For instance, Tiffany is consistent in her *Steven* character's portrayal as *down on his luck*, who resigns himself to the fact that things are always going badly for him. When her *Steven* finds out that *Ana* has a crush on his friend *Zach*, Tiffany writes, "Today was the worst day EVER. Ugh, this *always* happens." In another scene, her *Steven* says, "I felt terrible that the plan failed. It was all my fault. I'm a disappointment, to her [Ana] and everyone else. That's probably why everyone I cared for left me..." Tiffany is showing *Steven*'s internal feeling of guilt for all the bad things that happen to him – it must be his fault.

Izabella, writing from the perspective of *Sydney*, maintains her character's portrayal in her story as a good and innocent person. When the villain *Ana* is in hospital, Izabella's *Sydney* stays kind and empathetic: "I want to go to see Ana [in the hospital]". However, the date with a boy is considered more important: "...but I have another date with Zack tomorrow at Tim Hortons." In the girls' narratives, the feelings towards their love interests override the feelings of loyalty in friendships. In another sample, Tiffany, writing from *Steven*'s perspective says:

Wait a minute, I just realized something. Whenever Ana comes up with these crazy plans I always have to risk something... Like plan A. I could've gotten in trouble, which I did. In plan B, I might lose my best friend. Well, that doesn't matter does it? As long I get to be near Ana, I'm okay with it.

The students not only inhabit their characters but they also anticipate consequences their characters' actions will have for the other fictional characters in the story. For instance, Zoe in her *Ana* voice says, "Now Steven is in on the plan but Steven is scared that he will lose his best friend. I told him he won't, even though it is clear he will." Similarly, Laura comments in the same scene where *Ana* and *Steven* are photoshopping the picture in the computer lab, "...I wonder if Steven might ruin his friendship with Zach?... eh whatever." Once again, in the girl students' reflections, the character brushes off her feelings of empathy because the romantic feeling toward a love object is considered more important.

Emotions. Many emotions in students' stories were expressed in onomatopoeic sounds, as well in font sizing. Here are some examples: "AAAAAAAAAHHHHHHH ***I-I-I'AM E-EXP-EXP-EXPELLED FROM FOOTBALL PRACTICE oh and school AAAAAAHHHHH***"; "Today was the worst day EVER."; "I exclaimed from anger "POOR, NICE!?!". Several students showed their character's feelings not only through the use of font size but also by the additions of large emojis. For instance, Larrissa writes, "UGH. I just found out that our plan didn't work... Anyways...BLAH BLAH BLAH BLAH. I AM JUST SO ANGRY!"



Figure 16. Emoji added as an illustration.

In the following example, the student expressed the physicality of Steven's panic and nervousness: "Ms. Gackowitz caught me typing! Sorry got to)@#hjt*(uh jfj^gh&_ugkyjhue %^&\$&^%#^%*%^78" Some of the emotions in narratives the students expressed through physical description. For example:

... my heart skipped a beat. I could barely speak... and... I kept on doing weird hand stuff...; ...**sigh**... I just hope Ana at least knows that I like her.; I feel I had just got shot in the heart; ...my stomach started to ache. Ugh, it's probably the thought of me being with Sydney.; I walked to the office head down, ashamed of what had I witnessed.; I knew I wouldn't be able to sleep with myself at night if I ratted on Ana...

Several students interpreted physical behaviour and gestures of other characters in their writing:

I saw Ana and she had "**THE LOOK**" on her face which meant she had a next plan.; ...he just gave me *The Eye* and walked away...; He tried to spit on the floor but it ended up on my face. I think he was trying to act threatening.

The following sentence shows the student writer putting herself in the story's moment, while interpreting another character's behavior:

...now as I'm getting my things I'm getting dirt looks from people I don't even know and from people I do know. Zach is walking up to me... nope I'm wrong he just turned around heading back up the stairs taking the long way to fifth period so I'm just going to take his vibe as he is not my friend.

The students' immersion in the character's role showed particularly when their character talked directly to the reader: "Sorry for having to listen to me ramble on."; "And you guessed it, I got in even more trouble."; "I hope you will get to know her well." This direct link - communicating with the reader - appeared in 11 out of 20 students' stories.

Growths of the character at the end of students' stories. At the end of students' stories, most of their characters achieved some personal growth. For example, the villain *Ana* in Laura's story reflects:

After all that trouble, I was thinking about what I have done, how it did no good to me, and how I should really just enjoy my own life and to not be like others because you can't act like someone you are not. I wonder - Do the students at school still think I am a terrible person?"



Figure 17. Thought bubble as part of the text.

As seen from the reflection, Laura's character matures and becomes wiser.

Zoe's *Ana*, after going through the story's events, is able to sort out her romantic feelings and she gains a better understanding of herself. Even though she gets punished for her wrong doings, her life is transformed by the experience and she becomes a different person, happy with her new life. Even after *Steven* tells *Ana* they are both expelled from school, it does not seem to matter:

We hug and kiss for the first time but definitely not the last. Everything felt right in the world! I felt happy and I don't hate the world anymore! Well we are out of school now. I am not a weird goth that I wanted to be any more. Me and Steven now go to a different school together. I don't even know what's going on with Sydney and Zach... but I don't care! I'm just so happy with my life now.

Ana's life is transformed by the experience and she becomes a different person. In other words,

the *Ana* character achieves the ‘higher standing’ of a ‘hero’. Zahara writing as *Steven*, *Ana*’s accomplice, reflects at the end of the story:

I like Ana so much I was blinded by her beauty or plastic surgery who knows but I like her and was dumb enough to listen to any and every one of her commands without thinking twice and all for fame and fortune. I need to stop thinking so selfish and start thinking about others and how they feel.

Her *Steven* also worries: “Will my parents ever trust me again? Are my parents going to take away my phone?”

Another student, Tiffany, carries the *Steven* story even further, past the last scene on the story chart, after *Steven* and *Ana* are expelled from school for cyberbullying. In Tiffany’s story’s introduction, *Steven*’s dog ran away, which illustrated how everything was going badly for the character. At the end of Tiffany’s story, her *Steven* says, “Me and Ana have been dating for at least a month now and we bought a puppy together. As long as she (*the puppy*) and Ana are happy, I’m happy.” By having a dog enter into the story, Tiffany signals to the reader that all is well with *Steven* now. The character also shows his newly found confidence and strength by demonstrating that he is now the strong one in the relationship with his mother; he becomes his mother’s protector:

And for my mom, she’s going on websites like match and tinder. Every night I see a new guy come and pick her up for their date. When my mom leaves to get her purse or her phone I tell all her dates, “bring her back before 9PM or else.”

Both of the students’ narratives show that at the end, *Steven* becomes a more mature and wiser person. While two of the students writing from Sydney’s perspective leave the ending of their stories hanging, unresolved, the third student takes a proactive stand: “I text Zach on the what's

up app. I ask him if we can go on one last date. He said YES!” At the date at an ice-cream store, Sydney is hopeful their relationship can survive: “Zach still likes me. I know because he gave me his cherry [from his sundae].” Then the character continues to reflect and ends up on a happy note:

I have another date with Zack tomorrow at Tim Hortons. I hope I don't have to pay because I'm saving for my wedding. I hope I do get married because I have a lot of money. My mom said I could get married when I am 45, because that is the right age to have a life and enjoy it. I think I could get married when I am 19 because that's my fav number. I love school and my life. CYA!

Only the characters of Zach and the principal Ms. Gackowitz do not show much development. Zach stays in his state of bewilderment after seeing the photo of his best friend and his girlfriend in the school newspaper and does not tell us where he will go from there; only that he will ‘keep us posted’. For the principal, Ms. Gackowitz, the events in the story served as an eye-opener and reminder that she cannot take the order she has established in her school for granted. She realizes that she needs to be more vigilant. Adele is inventive in her writing as she relates what the principal says:

Today I got another problem with [Steven and his friend Ana]. They misused the computer which is an immediate suspension code #2154. They also misused the school yearbook camera which is an expellation code #2219. They also got a instant expunction for cyber bullying. Code #46778. That means there is one choice for them which is to go to a student boot camp for exponential expunction. I am very VERY disappointed that ANYONE for St. Robertson High School would have to go to that student boot camp for exponential expunction.

Summary - Reflections and emotions in characters' stories. A table follows, which illustrates the individual students' stories coded for a number of reflections and emotions exhibited. The total number of reflections include the ones where emotions were expressed. Empathy is included within the total number of emotions. Table 2 shows the results:

Table 2

Study B a) With Digital Technology: Number of Emotions and Reflections in Characters' Stories

No. of Scenes	Word Count	Student's Name	Story Character	Total Emotions	Empathy	Total Reflections
12	1193	Laura	Ana 1	21 (9 in text + 12 images)	2	18 (TR)
12	1387	Zoe	Ana 2	18 (11 in text + 6 imag. + 1 s)	1	29 (TR)
12	846	Tess	Ana 3	18 (13 in text + 4 imag. + 1 s)	0	11
10	1868	Zahara	Steven 1	11 (10 in text + 1 video)	4	20 (TR)
10	2270	Tifany	Steven 2	19	9	34 (TR)
10	448	Eric	Steven 3	6 (5 in text + 1 video)	0	10
8	1125	Isadora	Sydney 1	16 (15 in text + 1 image)	4	30 (TR)
8	954	Izabella	Sydney 2	9	2	16 (TR)
8	629	Charlize	Sydney 3	7 (6 in text + 1 image)	2	16 (TR)
11	783	Maya	Zach + Principal	9 (7 in text + 2 images)	1	16 (TR)
11	641	Victoria	Zach + Principal	7	1	14
11	910	Adele	Zach + Principal	15 (14 in text + 1 image)	8	25 (TR)

Note. Key: (TR) – author talks to reader.

Interestingly, the lowest and the two highest word counts in the stories are written from the ‘accomplice’ character, Steven’s, point of view. Steven’s stories, containing 2270 and 1868 words, were written by girls assuming the boy’s voice, exploring the character’s feelings and emotions in depth and describing each scene in great detail. Steven’s story, with only 448 words and the lowest count of emotions, was written by a boy writing in a voice of his own gender. In contrast to the writing of the girls, the boy writer skips on the surface of each scene, writes in factual sentences and employs humour. For example, “That night, I was dreaming Zac is famous for cleaning a garbage in the school and I laughed.” There is also the inclusion of crude language: “...if I be Ana’s boyfriend we were going to be famous like those jerks Sydney and Zac.”

Strikingly, nine out of eleven girl writers directly approach the reader in their stories through sentences such as, “Don’t tell anyone!” or “Don’t call me crazy!”. This suggests an intimacy, as if there were an already existing relationship between the writer and the reader; the writer wants to share her most private thoughts.

With the inclusion of multimodal expression (images, videos and sound) containing emotions, the average count is 13 emotions per student; without the added multimodal expressions of emotions, the average count is 9.58 emotions per student. Transmediation results on average in 3.42 more emotions per student. Interestingly, this is almost the same increase in *emotional count* as in Study A.

Study B b) - Narrative Analysis of the Story *Brothers in Arms*

The story was created by four students in the second session after it was noticed that the boys did not seem to be engaged with the topic of the story created during the first session. In this new story, all ideas and suggestions came from the boys, and the topic was most likely

inspired by the medieval studies which were on the class curriculum at that time. Built on the same *Snow White* structure as the story created in Study B a), the boys' story revolves around action, rather than an exploration of the relationships among the characters. The underpinning structure drew out a very different story from the perception of the boys.

There are nine male characters in the story, all but one are fighters, and a female character who needs to be protected. The students recast the *Snow White* characters as follows: *Jarod*, the villain, is cast into the role of evil Queen. *Thomas*, the hero, acts the role of Snow White. The *Wizard* takes the place of the accomplice, the huntsman from the *Snow White* story. A group of knights named *Timmy*, *Tommy*, *Tick*, *Tack*, *Toe* and *Tony* are cast in the role of the six dwarfs. The Queen is the prize giver, taking up the role of the prince from the *Snow White* story. She is there right from the beginning and it is her decision to choose the new knight that sparks the jealousy in the villain and gets the narrative on the move.

Characters' portrayals.

The villain – Jarod. Who is *Jarod*? Anton, writing from *Jarod's* perspective, says: "I am 25 years old. I live in a village near the mountains. When I was 18, my parents adopted a boy named Thomas. I never really liked him but I was forced to live with him." What does *Jarod* want? Anton tells us, "I had always wanted to be part of the queen's group of knights but she never accepted me. She said she saw darkness in me but I'm going to prove her wrong. Some day." Then Anton describes the given circumstances and what happened next: "There was a big ceremony today where the queen was going to announce her next recruit and I have been training very hard but she ended up picking my stupid stepbrother Thomas." Anton does not use exclamation marks, onomatopoeic words or change of font size in his writing. He simply states what happened in his character's situation.

How does *Jarod* get what he wants? Anton says, “I was outraged so I made a plan to kill Thomas by bribing the wizard at his cave to kill Thomas with a spell.” At this point, Anton goes off the track from his designated scenes on the story template and creates additional scenes for his character:

I had started recruiting Knights of my own to fight by my side so that I could take over the land. I held a lot of people imprisoned to make them my slaves for when I take over.

I was making my slaves build me a giant castle.

Then, Anton gets back to his next designated scene in the story: “My spy returned and told me that Thomas was still alive and that he had joined the group of Knights in the forest. I was outraged.” The next scene is described *in straight to the point* sentences:

We ambushed Thomas and the Knights and killed them all, bows & arrows, swords, shields and blood. It was brutal. Their bodies were lying on the dirty ground and suddenly I felt power in me. Me and my Knights went back to the village and started destroying the land and my Knights held the Queen hostage in her castle.

Only the last, climactic scene of the story is described with more details and includes one exclamation mark:

...we all started fighting like proper swordsman. I had pinned him [Thomas] on the floor but then he got up, kicked the sword out of my hand, stabbed me in the chest and threw me on the floor. I couldn't believe my eyes, I had been defeated! Two of the knights wanted to execute me but luckily Thomas denied them so in the end I was thrown in a dungeon until I die, but I'll get my revenge...soon.

Anton wrote his entire story in one session. It is worth noting some of the language expressions that Anton used. For example, he said: “I felt power in me.”; “It was brutal.”; “I had been

defeated.”; “...but I get my revenge soon.” In his account of the story, there are no emojis, or adjectives such as, sad, angry or the elaboration of the character’s feelings. The emotion is stated straightforwardly: “I was outraged.”

The hero – Thomas. Who is *Thomas*? David, writing from *Thomas*’ point of view, says: I am 17 years old. I was a peasant and my parents died when I was 10. They were assassinated... That was the last time I saw my parents. I try to get anything I can to remember about them. ... now I am an adopted teen. Jarod’s parents were the ones who adopted me. I now usually train to be the next famous knight in my village.

The given circumstances under which the story unfolds, David describes in a similar way to Anton; he writes straight to the point without using any emotional markers, such as exclamation marks or font manipulation:

Early morning, there was a big ceremony at the top of the castle. I was there with my step brother Jarod, who is also a good fighter. The queen chose me as her new knight. After I was announced as a knight, I walked around and then Jarod told me to come with him and go into the wizard’s cave. So, I went in ...

After the wizard tells *Thomas* to leave the village and find another one, David reflects: “I thought the village had betrayed me!” The character is unaware that his stepbrother *Jarod* is planning his demise. When *Thomas* meets the six Knights in the forest and tells them that he is the new Knight hired by the Queen, David writes: “Those knights told me to prove it. So, I was scared of what I saw. It was a big dragon and I was petrified and shaking.” Here, the student uses a very graphic, physical description of fear. Then, he continues,

The knights told me I had a choice to kill the dragon or to tame it. I chose to tame it because I didn't wanna kill a dragon, he could always come in handy. I decided to tame the dragon by giving him a burrito from Mexican 'Burrito' tree.

Interestingly, David's character, does not want to slay the dragon as the traditional hero would. Instead, he chooses a non-violent option of taming it by offering the dragon a charmingly imaginative treat. After becoming the seventh Knight of the group, the confrontation between the good and bad Knights ensues:

I see a group of ...[bad] knights. One knight said "AMBUSH!" So I knew we were screwed. Minutes went by and I thought in seconds, 2 knights died. Then the most painful thing hit my shoulder. It was an arrow. It felt like 10,000 bees stinging the same spot. I was breathing so fast. I only saw 3 knights on ground. Then I thought I saw 4 knights. I think I was dreaming. Minutes later Jarod left us there."

In this part, David uses a profane language expression, something that was not encountered in any of the narratives written by the girls. The physical pain of the character is vividly described by the use of a metaphor. Perhaps the most striking is the repeated reference to numbers and time. David's character *Thomas* is now aware that his stepbrother is with the bad knights but the student does not say how the character feels about it or comments on their relationship. His focus is on the preparation for the final battle between the good and bad knights:

I saw the Wizard who did a 'Power ritual' and he gave me a cross amulet. When I put it on, I felt like I had so much power. The Wizard told me that I needed to train harder to beat Jarod because he had become stronger and had better armors and swords. It has been 1 hour of training and then the Wizard gave me an ancient sword and it was carved with my name on it.

References to power, strength, and weaponry appear throughout. The big finale of the story culminates in the fight between the good knight and bad knights in the Queen's castle. Here, David uses capital letters for emphasis and one exclamation mark:

I see his [Jarod's] men going into the queen's castle. So, we decided to chase him there. My worst nightmare has come true and it was STAIRS! Anyways, it was a spiral staircase so it would take longer for me to get up there. At this time, my life flashed before my eyes... When we reached the top, the knights gave no mercy on Jarod's knights and Jarod and I had a huge fight. This is my favourite part: I kicked the sword out of his hands and next I kicked him down and gave no mercy but I did not kill him. The knights told me to kill him. But the queen and I said, "Lock him in a dungeon until he dies". That was the last time I saw him. At the end, I was promoted to be the leader of the knights.

Similar to the forest scene where *Thomas* decides not to kill the dragon but to tame it, the student chooses a non-violent way to deal with the situation. His character *Thomas* acts against the wishes of the surviving Knights and prefers the villain to stay alive. The hero *Thomas* remains the *good*, innocent character till the end, even when he is aware that his stepbrother is on the side of the *evil* force. One could guess that *Thomas*'s decision to keep his stepbrother alive is based on the loyalty to the family that raised him but we cannot be sure, because the social feelings and relationships were not discussed in the student's narrative. In contrast, the physical feelings of pain were described by the student in very vivid ways.

Helpers – Group of Knights. The six knights are cast into the role of the dwarfs in the *Snow White* story. They provide the protective community for *Thomas*, the hero, by making him

a part of their group. Asher, who writes from the Knights' point of view, acts as their spokesman and introduces the Knights as follows:

Names: Timmy Tommy Tick Tack Toe Tony; Year: 1376. We work for the queen and we're all brothers born into a royal family. We started our training when we were 7 and became knights at the age of 19. Also, we're fraternal sextuplets, we're all 22 now.

In a similar way to David in a previous text, Asher uses a lot of numbers and references to time. Rather than finding some medieval names for the Knights, he invents his own. All the Knights' names start with letter 'T', perhaps so the hero *Thomas* will fit later on within the Knights' group. The names, Timmy, Tommy, Tick, Tack, Toe, Tony are fun-sounding and, in a way, similar to the seven dwarfs' names in the 1912 Broadway play of *Snow White*, where they were called: Blick, Flick, Glick, Snick, Plick, Whick, and Quee. Although Asher had no way of knowing about this coincidence, perhaps his motivation was similar to the Broadway writers', to make humorous rhyming names.

In the next scene, Asher describes what the Knights want and what are the given circumstances:

We're on a quest to get a sword or something. We don't know any legends about this sword, maybe someone else knows one... We just met Thomas...we wonder if he's worthy enough to join our group. We gave him a challenge: he must either slay or tame a dragon. ...We don't know if this is important now but this dragon also flies. Thomas just tamed the dragon... Well, he's now part of the group as a 7th knight. Don't tell anyone but we were gonna recruit him anyways. Don't tell anyone! As a reward, Thomas gets to keep the dragon as a pet. He rides it all day now. We wonder if he ever sleeps now because he's always flying around all day.

In this part of the text, Asher approaches the reader directly: “Don’t tell anyone!” The character’s reflections are often sentences containing what psychologists call ‘false-belief understanding’ which is the understanding that an individual’s belief or representation about the world may contrast with reality (Reber et al., 2009). For example, “We don’t know any legends about this sword, maybe someone else knows one.” “We wonder if he ever sleeps now because he’s always flying around all day.” In the next big scene, Asher writes:

We’re being ambushed...! We have no idea who he [Jarod] is but Thomas told us he is his step-brother. I guess Jarod is just jealous of Thomas. We don’t know where he got these bad knights but there is a lot of them. Tick and Tack are dead and Toe crawled off to the castle. Everyone else is injured.

In Asher’s description of the attack, there are no onomatopoeic words included; neither is it written in choppy bursts of sentences, as it was in dramatic scenes of many girls’ narratives in Study B a). However, later on the boys found sound effects such as arrow shot, heartbeat and rain from the Internet, and injected them into their digital stories. The rest of Asher’s story is narrated in a similar way, in brief factual sentences without any descriptive details:

... the wizard came to us, and everyone got healed except for Tick, Tack and Toe.

Thomas now has the ancient sword, probably because he was the descendant of the best fighter. We came back with Thomas, his dragon... and we killed the bad knights in the castle. Jarod was thrown into a dungeon.

The accomplice – Wizard. As noted, the wizard role is the *hunter* from the *Snow White* story. The role was taken up by Meaghan, the only girl in the group. Meghan writes:

Hello, I am The Royal Wizard. The Royal Queen hired me a long time ago. A long time ago I was just a normal peasant. You may ask now how am I All-powerful now? Again, a

long time ago, I traded some gold for a *Silver Emblem* with an emerald on it, but little did I know it had black magic in it and cursed me with powers. Now I am all powerful.

Meghan involves the reader by posing a question. Then, she describes what happened next:

Recently a new Knight has been announced. His name is Thomas, and I have been bribed by a peasant named Jarod to cause an ‘Accident’ so the new knight cannot fight. It is a lot of gold, but I still couldn’t let this happen.

In comparison to the *huntsman* in the *Snow White* story where the *huntsman* feels sorry for the girl and lets her go, the Wizard’s motivation is not a pity but rather a conscious feeling of doing what is right. The character exhibits a strong moral stance. Even though the Wizard took the money, Meghan provides a rationale:

Jarod probably wouldn’t not stop if I refused, so I accepted. I still couldn’t promise this ‘Jarod’ exactly what he wants. I was in the cave... when I saw Thomas a few meters away. I summoned the rock, but I changed it into a pebble. I cannot hurt the new Knight.

Then, Meghan continues, “I told Thomas to run, to pass through the “Gacylt Woods” and that there is another village, where he should be safe.” The use of the Anglo name Meghan uses shows her knowledge likely acquired from the Medieval studies in the curriculum or, perhaps, from her personal reading. The scenes in the Wizard’s story are described briefly and her text is not much developed. However, it should be noted that Meghan was the only student in combined studies B a) and B b) who said that she liked to draw. Her preference was to focus on doing her original artwork for her story, as well as providing drawings for other stories in her group. Meghan also incorporated into her story sound effects from the Internet.

The prize giver – Queen. Meghan also wrote the Queen character’s story, as there were just a few scenes in which those two characters participated. Meghan introduces the character in the following way:

Hello, I am the Royal Queen. I became a “Queen” from being a “Princess”. My Father had died a long time ago, and my Mother had stepped down from being the “Queen”. My mother had become depressed and angry that he had been poisoned, so I had to become the new “Queen”.

Interestingly, Meghan references the character’s mother’s emotional state, not that of the character herself. Then, Meghan describes briefly the circumstances:

I had hosted a new ceremony. I had also picked the best Fighter to become a new Knight. I had planned to tell him to join the Knight group in the other Village that I had set up but I wanted to tell him at the next “Ceremony”.

Here, Meghan refers to the group of knights that Thomas meets later on in the forest. The next scene Meghan describes in great detail:

I was sitting in my castle bedroom, when I heard a bang. I heard glass break and crash and I was petrified! I felt like I was going to be sick, but I had to see what it was. I just couldn’t be scared, because I told myself, ‘I have my duties’! I walked down the castle stairs very slowly when I heard a faint hoarse voice. So I rushed down unable to think about what would happen. I came to see one of the members of the Knight group I had arranged. He had told me it was too late to even try to save him, and that he came bearing a message. He had said exactly, “Thomas has grown weak. He has been shot by an arrow. Send the wizard to heal him and to give him the ‘Ancient Sword’ to wield”.

Meghan shows the character's strength and bravery: "I just couldn't be scared, because I told myself, 'I have my duties'!" The Queen suppresses her fear and confronts a conceivably dangerous situation to her by stepping out of her chamber to see what is going on because she feels a sense of *duty*. At the end of her story, Meghan writes:

I had... sentenced Jarod, the New knight's brother, to the 'Dark Dungeon' for life. I had not expected him to be so full of rage, and jealousy...I had rewarded Thomas with a lifetime's supply of gold and a real spot on the knight's group. But he somewhat neglected the gold and said he was just fine being a knight without it. But of course, I still rewarded him.

The hero *Thomas*' refusal to accept the monetary reward of gold from the Queen seems to reflect the character's goodness and purity that is consistent with *Snow White*'s archetypal role.

However, in David's writing from the hero *Thomas*' perspective, the Queen's reward of gold and his refusal of it are not mentioned. The student was unaware of what Meghan wrote in her *Queen*'s story until it came the time to act out the video scene using *Green Screen* and was told about it. There was no collaboration between Meghan and David as they sat and typed on their laptops beside each other. At the end of her story, Meghan includes a quotation: "With Anger comes rage, and with rage comes weakness~ K.L Armstrong / M.Mar"

Summary. Even though the students' story addresses the topic of personal jealousy, there seems to be a different theme pervading the tale: the power struggle between good and evil. The theme of good knights trying to protect the Queen and bad knights wanting to take over the land overshadows the personal jealousy of who is the best fighter, and the desire to be part of the Queen's group of knights. The emotional references in the students' stories are mainly to the characters' physical, not psychological, pain.

Some elements noticed in the writing of the boys were the use of humour, for example the invented names for the Group of Knights, “Timmy Tommy Tick Tack Toe Tony”, and occasional vulgar language expressions such as, “stupid step brother” and “I knew we were screwed.” Similar language elements were not found in the stories written by the girls in Study A and Study B b).

Reflections and emotions in characters’ stories. Each student’s story was coded for a number of reflections, total emotions (including empathy) and empathy only in a separate column. The following table 3 shows the results:

Table 3

Study B b) With Digital Technology: Number of Emotions and Reflections in Characters’ Stories

No. of Scenes	Word Count	Student’s Name	Character’s Name	Total Emotions	Empathy	Total Reflections
8	451	Anton	Jarod	5	0	12
12	752	David	Thomas	6	2	10 (4s)
8	358	Asher	Knights	1	0	11 (TR) + 1s
10	637	Meghan	Wizard + Queen	8 (7 in text + 1 video)	6	15 (TR) + 1s

Key: (TR) – author talks to reader; s – digital sound inclusion.

The highest word count is in the hero/Thomas’s story and it also contains the highest emotions count from the narratives written by the boys.

The emotions are of a physical nature; they are not psychological. They are not referencing the hero's psychological state of mind, for example, as being excited or sad. They are the primal emotions of fear and of physical pain that Damasio (2003) calls the 'images from the flesh'. In the same story written from the hero's point of view, there are also the most digital sounds included. Sound effects, particularly for the battle scenes, were of high interest to the boys. Meghan's stories, the only girl participant in the study B b), have the highest reflections and emotions count. Two of the writers, a boy and a girl, also talk to the reader, which suggests a feeling of intimacy towards the reader, even though the writer does not know who the reader will be.

At the beginning of Study B, the teacher's and my goal was for the students to take ownership not just of the content but also of the production of their hyperstories, using *Book Creator* and the *Green Screen* app by themselves. This did not happen. There was not enough time to instruct the students on how to do it independently and there was not time for the teacher to do it with me because it was the end of the school year. Thus, the final stage, the digital assembly of the students' stories into the form of hyperstories was not completed, and could not be published online. Overall, Study B(a) would have yielded three versions of the *High School Madness* story (which would have been interesting to compare in their entirety) and one story in Study B(b), *Brothers in Arms*.

Study C

Synopsis and template of the class-created story - *The Incident*

Audrey asks the Coach who's the best gymnast. "Michaela" is the answer. Audrey makes a plan; pretends to be Michaela's friend; invites her on a trip on a train. As the train crosses a bridge, Michaela is pushed into the river below. She swims to shore and finds herself in a forest. There she meets Unicorns and helps them. As a reward, they transport her home on a rainbow. Audrey finds that Michaela is back, and devises a second plan. She steals some *mac and cheese* from the supermarket and prepares it with poison. She brings it to Michaela, who eats it and faints. The Unicorns arrive and revive Michaela. During the Olympic tryouts in the gym, Audrey is arrested and told that she will be sent to the 'Juvenile Home'. Michaela gets picked for the team.














SYMBOLS OF PROPP'S ACTIONS	CHARACTERS:	AUDREY	MICHAELA	UNICORNS	COACH	POLICE
 1. Initial situation	Scene 1 Introduction: "About me"					
 4/5. Villain asks question, gets the information	Scene 2 Audrey asks the coach					
 6. Villain tricks the hero, assumes a disguise	Scene 3 Audrey makes a plan; pretends to be Michaela's friend; invites her for a trip					
 7/8. Hero/ine is fooled and taken away	Scene 4 Going on a train trip					
EMERGENCY 8. Emergency	Scene 5 Falling into a river					
 9/10. Hero/ine goes or is sent on journey	Scene 6 Meeting unicorns					
TEST 12/13. Hero/ine is tested for kindness and help	Scene 7 Helping unicorns					
 14. Hero/ine is rewarded	Scene 8 Unicorns' reward - transporting Michaela home on a rainbow					
 Repeat move 4/5. Villain asks question, gets the information	Scene 9 Audrey finds out Michaela is back					
 6. Villain tricks the hero, assumes a disguise	Scene 10 Audrey's 2nd plan; theft in a supermarket; preparing poisoned macaroni					
 7/8. Hero/ine is fooled	Scene 11 Audrey bring macaroni to Michaela					
EMERGENCY 8. Emergency	Scene 12 Michaela eats the macaroni and faints					
 11. Heroine meets magical or unusual people	Scene 13 Unicorns arrive and revive Michaela					
TASK Or TEST 25/26. Hero/ine undertakes test; Test is accomplished	Scene 14 Olympic try-outs at the gym					
 30. Villain is punished	Scene 15 Audrey is arrested and told she will be put in a juvenile home					
 31. Hero/ine is recognized, rewarded, and/or is married	Scene 16 Michaela gets picked for the Olympic team					
 1. Home (additional symbol for ending of story)	Scene 17 Afterword					

Figure 18. Template for Study C story - *The Incident*.

Writing from the Characters' Perspectives; Description of the Classroom Process

Study C was conducted with 24 French Immersion students - 15 girls and 9 boys. As there was a gap of two months between the session when the story was created and when the sessions resumed, it was necessary to review the story with the students before we could proceed. I used the magnetic board with the revised symbol map of the story structure for guidance. Surprisingly, the children still remembered the story and they summarized it with great details even after such a long time! Then, all students were given the template of the story for guidance and instructed to write from their chosen characters' points of view, and draw pictures if they wished. As there were 24 students, who worked in groups of four, there were six different student groups telling the story from each of the character's point of view. (So, there were six versions of the story.)

Writing without digital technology. There was no digital technology available in the classroom, except for one ancient looking computer that nobody used. All students wrote by hand, using pencils, markers and paper notebooks. As the students wrote, I observed that they all seemed to be engaged and absorbed in what they were doing. At the recess break between the two periods, the students asked the teacher if they could stay at their desks and write instead of going out to play. The teacher was surprised and emphasized they *should* go out and play. A few boys left, but most students stayed and worked on their stories. One of the girls asked me, "Shouldn't there be a narrator in the story?" I explained to her that the narrator would be in fact the reader of the story, as she or he would have to put all of the characters' stories together to figure out what really happened.

After the session, I reviewed the students' notebooks. Students understood what it meant to write from the characters' points of view and they wrote *in character*. Two boys, Samuel and

Jim, told their stories in the form of a storyboard. However, Jim used speech bubbles in the panels sometimes for *all* of the characters present in the scene, containing lines that showed what *each* character was thinking. Arabella, who was identified as a student with learning challenges, also wrote the whole story as direct speech of *all* characters but she used five different colours in order to indicate which character was speaking. The colours she used matched the colours by which the characters were represented on the story template. In other words, this student used colour coding from the story template to indicate which character was talking.

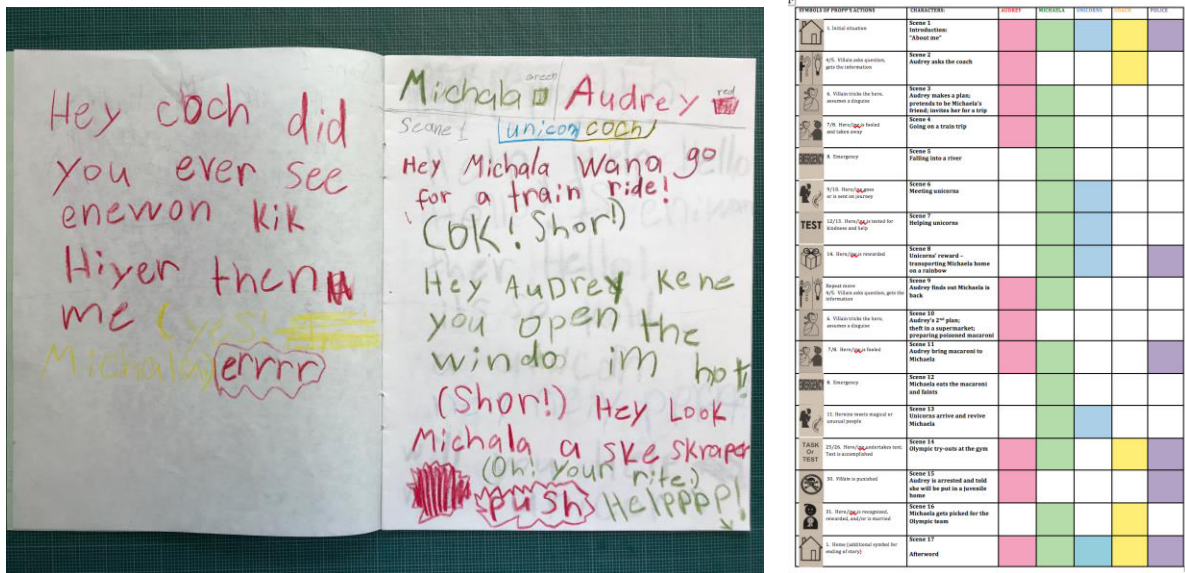


Figure 19. Student's pages reflecting Story C template.

Arabella's approach to communicate to the reader what was going on in the story through colour was nothing short of brilliant! Four girls switched their writing format during the action scenes into the form of a script; they wrote their character's lines in present tense instead of writing the scenes as diary entries. Some students capitalized their words within their handwritten text for expression and added emojis.

As this was a grade 4 French Immersion class and the students just started to receive their first instruction in English, the students' grammar was not of concern. I realized that this activity

might have been the students' first foray into narrative writing in English. More than a half of the students, most of them girls, seemed to be really engaged with the story and they wrote well. About eight of them produced really terrific writings. On the other hand, the boys did not seem to be engaged in the same way.

Gender differences in writing. The writing of the boys was brief, there were no details provided or in-depth description of scenes. Most boys just skimmed over what happened in each scene, with a few sentences. I decided to provide the students with sheets of guiding questions for their characters so they would have something more to consider. In the next session, I explained that the questions might be helpful if the students did not know what to write about. The strategy turned out to be only partially effective. While the girls seemed to respond to the question sheets and as a result many of them enlarged the scenes of their stories, the questions did not draw much response from the boys. It was almost as if the questions went right over the boys' heads. Was it because of the topic of the story or that the story's main players were girls? Yet, only one boy was writing from the female character's perspective. The other boys chose to write from the coach, policeman or the unicorn's points of view. Thus, the character's gender was probably not the problem. Even though the coach and policeman were only minor players in the story, still, the students had unlimited freedom to invent and add more to their texts. I discussed my concern with the teacher who offered to try another approach with the students.

In the next two sessions, the teacher took charge and tried a different strategy. After he reviewed the students' work in their notebooks, he chose a 'good' sample of writing and read a few scenes from it to the students. Then, he compared it verbally to something he made up. Afterwards, the teacher 'took questions from writing' and conferenced with the students one at a time. The teacher's strategy was implemented in conjunction with the question sheets I

provided. The students' writing improved after the strategy was implemented but still, the resulting effect on boys was minimal. Four of the boys added some narrative details and developed their stories a bit further. There were no changes or additions to the remaining five boys' texts. In contrast to girls' narratives, the boys' stories remained brief and lacked depth.

Collaboration. When I read across the scenes in students' stories, I noted there were not any discrepancies in the characters' storylines. I remembered that after the first session one student took a creative *detour* in her story from the rest of her group but she changed her story to fit with others on her own. The facts and events sequencing among the characters' stories matched within each of the groups. Furthermore, the students who were creating the *unicorn world*, were inspired by each other's writing and drawings even if they belonged to a different group. For example, Hana used the name *Leprgummy* for her unicorn character and that name appears in Asher's *Unicorn Family Chart* in his own story from the unicorn's point of view. Another student's writing from the heroine's role, mentions both *Chocopeanut*, Asher's unicorn, and *Leprgummy*, Hana's unicorn in her story. The students were referencing the other characters by their names and actions in other characters' stories within their groups, and there was also a cross-pollination of ideas from one group to another as well. In other words, the students *were aware* what the other members of their group were doing and their stories clearly showed there was a collaboration.

This finding surprised me because in Study A and Study B, the discrepancies within students' stories were a big problem. In all three studies, the students did the same project in a similar setting and worked in groups within close proximity of each other. The only difference was that in Study A and B, they wrote on their computer laptops, while in Study C, the students wrote with pencils in paper notebooks. I observed however, a difference in students' behavior

while they were writing. For example, in Study B, the students would stare straight ahead intently at their screens. They did not look around at what their peers were doing. Even when someone entered the library, the students did not take their eyes off their computers and they did not look up to see who it was.

On the other hand, the atmosphere in Study C seemed to be more casual. Students would stand up from their desks, sit down again, turn to the people beside them, say something, walk to another table to borrow something. They would walk across the room to use a manual pencil sharpener and on their way, they stopped and spoke to their classmates. Perhaps digital technology devices created a *distance* in the classroom setting. Even though the devices are meant to bring people together and enable communication across distances, it seems possible that the digital technology may isolate persons from each other when they are physically close, sometimes right beside each other. In sum, the students writing the traditional way exhibited more collaboration within their groups than the students who used computers in their groups for writing.

Multimodal storytelling without digital technology. In this study, enrichments of the stories with multimodal elements were not added after the writing separately but rather they were included within the students' texts. The students' gravitation toward a particular way of expression was visible right from the start. For example, Samuel, who read comics when I first came into the classroom, drew his story in panels instead of writing sentences. Several girls acted the scenes of the story near their tables even though acting was not discussed beforehand. They stepped into the roles of their characters, performed gymnastic movements like the ones in their story, and talked in changed pitch of their characters' voices. "I also go to Pilates class!" Sara remarked to Liane while making a snobbish gesture. Later, I noticed that these students

titled their notebooks as *Drama* or *Acting*. As the children wrote with pencils in the paper notebooks, some students inserted their drawings directly within their texts.

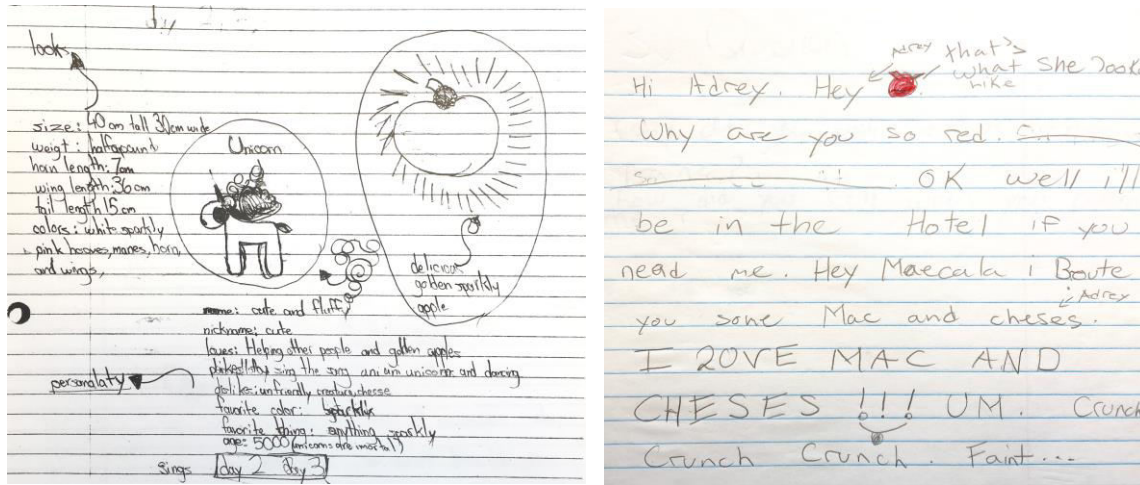


Figure 20. Samples of students' pages with images within students' texts.

Sixteen out of twenty-four students included a drawing within their stories by their own initiative. There were several maps, a unicorn family tree chart and pictures of unicorns in their magic realm. The students' writing was peppered with onomatopoeic words. For example, in Hana's story through a unicorn's point of view, the sentences were sprinkled with "neagh's".

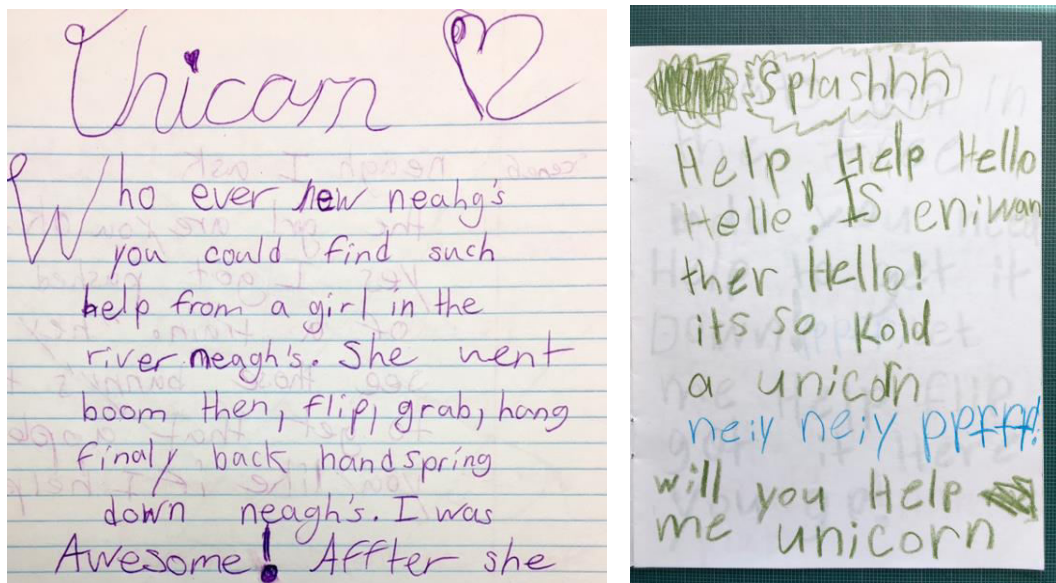


Figure 21. Hana's page on the left; Arabella's page on the right.

When I asked what “neahg’s” meant, Hana explained that it was a sound a horse would make, and that unicorns are like horses. In her way, she was inventing a unicorn language. Arabella expressed the voice of unicorns in her text as “neiy, neiy, ppfff!”. There was even a lyric for a unicorn song in two of the students’ stories and a dance presented in graphic form.

Project’s culmination: Presentations by the characters and the ‘News Conference’.

For the last session, I proposed the following plan:

1. Students review their characters’ stories in their notebooks.
2. Each student prepares and writes down questions they have for the other characters in the story.
3. Then, we ask for one volunteer from each of the characters (*Audrey, Michaela, unicorn, coach* and *policeman*) to come up in front of the classroom and tell the story from their character’s point of view.
4. This would be followed by the *News Conference*, where students would assume the role of journalists, pose questions to the panel of characters (standing up in front of the class), and note down the answers. The group of *Audreys* would come up first; then the group of *Michaelas* followed by all the *unicorns, coaches* and *policemen*. The teacher would be the mediator and I would be the cameraman, videotaping the *News Conference*. This, as I had imagined, would be similar to a *News conference* during Film Festivals after the screening of the movie where the panel of actors (including the director) are questioned about the movie by journalists and the audience.

The first part of the session, students’ oral storytelling from the character’s point of view, worked really well. As the students were not constrained by reading their story from their notebooks, they spoke as the *characters* and became animated, using their voices and gestures

for expression. At the end of each character's performance, the peer audience clapped. To my astonishment, the boy who wrote only a few lines for his character's story, spoke in eloquent sentences using great vocabulary while he was storytelling in front of the audience.

In the *News Conference* that followed, the classroom became charged with energy. The students/journalists asked the characters standing up in front how they felt during some situations in the story, what motivated their actions and they probed for further explanations. All students *in character* were eager to provide their answers. It was fascinating to observe the students' exchange. The activity was collective and very effective because, as the teacher later commented, "it put the kids on the spot". After the session, I realized that I could not judge the boys' "engagement" by their amount and style of writing. As the boys all enthusiastically participated orally, their engagement had to be judged by other means.

Narrative Analysis. The class-created story fits the definition of a fairy tale: it contains human protagonists and elements of magic. There are five roles in the story: villain Audrey, heroine Michaela, magical helpers the Unicorns, Coach and the Police. The students placed their story in the present time and made the main characters (villain Audrey and heroine Michaela) 13 years old, just a bit older than themselves. Both main characters act independently; parental figures are absent from the story. The object of the villain's jealousy is the heroine's agility as a gymnast. As there were 24 students in the class who worked in groups of four, there are six portrayals of each of the story's characters.

Background context. During the first session, the students had decided that the villain was going to carry out the *evil plan* herself. They eliminated the *accomplice* role from the story structure. After the session, I noted that this structural change consequently created several logistical problems. For example, in the story the villain pushes the heroine out of the train but

the heroine survives and returns home. If the heroine knew who pushed her, upon her return she could just report the villain and that would be the end of the story. I needed to ask a lot of questions, so those problems could be resolved.

In the second session, I presented the problems in the story to the class. From my previous experience with creating stories with children I knew that I could trust in the children's ability to come up with a solution. Now once again, my trust was reaffirmed. The students suggested that the heroine was pushed from *behind* so that she was unaware who did it. However, the students said, there was a witness on the train, who reported the crime to the police. This narrative *move* in terms of the story's logic cleared the way for the villain to proceed *innocently* with the second evil plan, and it also provided a clue about how to identify the villain later on.

In the second attempt on the heroine's life, the villain goes to the supermarket to get a box of macaroni and cheese, the heroine's favourite food, so that she could poison it. The students suggested that in the store, the villain *stole* the package of macaroni and was caught on the security camera. Later, the police used the description given by the witness on the train and the camera footage from the store, and by *facial recognition* technology were able to identify the villain. At the end of the story the villain is arrested without the heroine having a clue that her so-called *friend* was in fact the villain. The story became like a puzzle that only the reader could figure out by reading all of the characters' stories, and that was exactly what I was aiming for. The students resolved the logistical problems in the story by substituting the accomplice role by the witness on the train and by adding police and thus making the story work.

Characters' portrayals: Perspective taking.

The villain – Audrey. Audrey's character was portrayed by five girls and one boy. From her outward appearance, *Audrey* does not fit the stereotype of a villain. The students portrayed her as a regular, confident person but someone who displays a narcissistic personality. When confronted with a possible defeat in the upcoming Olympic tryouts by her peer rival, *Audrey's* calculating and manipulating nature comes to play. Sara, writing from *Audrey's* perspective, describes Audrey's character in the following way, while referencing her own world:

I'm awesome. I'm doing really well in school. I get A+ all the time but I'm not a nerd. I have 100,000 followers on Instagram, 400,000 on Facebook and I'm not sassy. I'm interested in ballet, Jazz, tap, swimming, ice skating, (figure), singing! & Art + Reading... I'm also into fashion! My friends are..."

Here, Sara uses real names of her friends in a classroom. Then, she continues, "I also really like GYMNASTICS! I think Michaela steals MY spotlight all the time. I will cream her at gymnastics."

Audrey wants to be picked for the Olympic team and she is confident that it will happen: "I bet you 100 dollars that I will make the Olympic team." That is, until she asks her coach, "Is there anyone in the world better than me at kicking?" When the coach answers her, *Audrey* reacts: "Suddenly I become furious because if Michaela can kick higher than me she will make it to the Olympic team and I won't." *Audrey* does not have magic powers or an accomplice to help her. She has to figure out how to get *Michaela* out of her way.

Deanna describes *Audrey's* thoughts in a very animated way:

Hmmmm... Aha! A train – I'll push her off a train but – ewww! I'll have to pretend to be friends with her though it'll totally be worth it, he, he, he, ha, ha, ha, wha, ha, ha, ha!

“Hi Michaela do you wana come with me to see the sights of New York” and she fell for it! She is so Doomed! He, He, He!

During the creation of the class story, when the students had decided that *Audrey* will invite *Michaela* on a trip and push her from the train, I asked them if *Audrey*'s intention is that *Michaela* will break her legs so that she will not be able to compete in the Olympic try-out.

“No!” the students said and adamantly insisted that *Audrey* wants *Michaela* dead. According to Piaget (1965), children believe that retributive justice is most just when it is most severe.

Interestingly, in the students' stories the girls described the villain's intention as, “I have to get rid of her”, while the boy writing from *Audrey*'s perspective phrased it in a sentence, “I will murder her.”

The heroine – Michaela. True to the *Snow White* archetype, the protagonist *Michaela* is an innocent person and unaware that her physical skills as a gymnast cause jealousy in the villain *Audrey*'s mind. *Michaela*'s outward appearance and interests may be similar to *Audrey*'s, but her demeanor is different. *Michaela* is portrayed as a quiet, modest person who does not boast about her abilities the same way that *Audrey* does. The students writing from *Michaela*'s perspective reference the world they live in, technology, their own interests and the names of their friends in the classroom. To identify with the character, some students may even be describing themselves. For example, Kira writes:

I'm an A+ student and love sports. I really, really love books like Harry Potter, the Doll people and the BSC. I have an iPhone and a laptop. I don't use them unless it's for contacting... My friends are Audrey, Hana, Elisa, Ella, Marisa, and Liane. I don't like bragging but I'm really good at gymnastics. I love emoji's.

There are small nuances in how students view the relationship between Michaela and Audrey. For instance, one student writes: “My friend’s name is Audrey. She (like me) LOVES gymnastics she is very nice.” Another student feels differently: “There is an Audrey in my gymnastics class who thinks she is the best at everything. She is not, though... Laura is my friend. Audrey is not.” However, *Michaela’s* feelings toward *Audrey* change. Liane writes,

The next day, Audrey walks up to me. OMG! I can’t believe it! No! Audrey just invited me on a trip! I thought, that she hated me! I always hear her going on to her “friends” (her minions who always follow her orders. I don’t think they are her real friends) about how much she hates me. I guess that she changed her mind about me.

Interestingly, one student writing as *Michaela’s* character, describes overhearing the conversation between *Audrey* and *Coach* and seeing *Audrey’s* reaction to *Coach’s* answer:

All of a sudden Audrey’s face turn bright red, poor her, she Always works so hard! I ... wait a minute! If I’m better in kicking than her than she won’t get in the Olympics! She could kick higher in the tryouts But I’m better than her at round offs too. And wining on bars too! I feel so bad for her!

The student is not only able to enter the mind of the character from whose perspective she is writing but also to infer the feelings of another character in the story. She understands the impact *Coach’s* comment must have had on *Audrey* and shows her character’s empathy!

Stylistic devices in writing style. The students’ descriptions of the dramatic scenes are bursting with sounds expressed by onomatopoeic words. For example, the students writing from *Audrey’s* perspective describe the scene on the train in the following way: Elisa writes, “Ahhhhhhh! SPLASH! Done (happy) Me: now im glad that’s over with all that niceness it makes me sick!” Sara describes the scene as, “Oh Makala the window is open, never mind” “Oh

look there so cute the duckees, no no no, over there, yeah!” Makala: Aaaaaahhhh “Ops, sorry(not)” “Yes, the spot lite is mine again!”

Deanna:

Michelle-a got the window seat and the window is open. One minute till we’re over the bridge. “Hey, Michell- I mean Michaela, look at the cute little tower behind the river!” 5, 4, 3, 2, 1, ‘splash!’ “Yesss!” She’s so gone! Now I can sit back and relax, ☺.

However, in one of the stories, the student writing from the perspective of the villain *Audrey* shows empathy for her victim: “She [Michaela] must be cold in the winter lake!”

The same scene on the train written from *Michaela’s* perspective is described by the students in a similar form, animated with onomatopoeic words. For example, Liane writes, “Oh! Suddenly, I get pushed. Ahh! I’m soaring through the air!! Owww!!!” Kira tells us:

Aaaaaaaaah I’m falling...

Where am I? What? I’m in a river!!!!!! Help, help, help! What... I know how to swim... there’s a log... I’ll grab that ☺ The water is warm ☺ so it isn’t that bad. Arg, I’m hurt, wet and lost. Finally land!!

Writing in these short, almost staccato-like sentences seems very appropriate for the scene.

There is not time to spare, everything is happening so fast, and this style of writing captures the situation. The students’ writing often feels like direct speech, a stream of consciousness pouring out onto the paper. For instance, when *Audrey* finds out that *Michaela* survived and devises another plan to poison her rival with macaroni and cheese, Deanna, writing from *Audrey’s* perspective, describes her scene in a supermarket as follows:

Darn! The mac & cheese is sooo expensive, well, it wouldn’t hurt just to not pay for it, hmmm, ooh! 10m from the door, I can sprint pretty fast. I can carry 5, that’ll be anuf and

I've got a bit of poison at home for mice, it'll have to do. Lots of cheese, 3 bars. Now the cashere is going to turn her head to the person, ready, set, NOW! 'Wsssshhhh' I was off in a flash, before the alarm went off I was 2 streets away...

Elisa writes in the supermarket scene, "Where's the Kraft dinner? Oh here it is and now I will put windshield washer fluid in the Kraft dinner so when Machala eats it she will die. Bah ha ha ha. Oh, I forgot my money..." These students seem to be able to enter the situation their character is in. While the girls provided details about the kind of poison the villain intended to use and about what happened in the supermarket, the boy who wrote from *Audrey's* perspective summarized the situation just by one line: "Poison is my only solution. Yay!"

Appearance of dialogue. Sometimes the students include a direct speech from the other character in the scene rather than describing what the other character told them. For instance, when *Michaela* climbs onto the river bank, walks into the forest and confronts the unicorns, several students switched into a speech dialogue, back and forth conversation written as a script. Liane writes, "Wait!" That was Leprdgumy. I turn around. "We can take you home!" Liane was mentioning Leprdgumy, the name of the unicorn's character in her group. She references another unicorn's name, Cherryfern, in a later scene where her character *Michaela* faints after being poisoned: "Looks like I can't go to tryouts because I'm sick," I say. Cherryfern says "no worries! Here." She gave me a juice and I drank it. I instantly feel better." Both names, 'Leprdgumy' and 'Cherryfern' appear on the *Unicorn Family Tree* chart created by another student, Asher, who was sitting at a table near Liane. It clearly shows that these students have collaborated.

The students' writing is not like customary diary entries written in past tense about what they saw and what happened. The students are really in the moment and their writing reflects

that. They are not following a formula. Their speech feels genuine; the words come out as the students feel them. In the scene of the Olympic try-outs, Deanna in *Audrey's* role, writes:

SHE [Michaela] IS BACK!!!!!! How? What in the world, did she go to the doctor, what? And the tryouts are about to start! ... should I do something to hurt her? Like push her? If I pushed her she would tell the Olympics people and I would be kicked out, the humiliation! I'm up, I kick 120 degree- higher than everyone else, Samantha was 100 degree, Anica 98 degree, etc. etc. – I was Best By Far! I did flips, I did the splits, handstands, cartwheels, everything was perfect. But then Michelle-a kicked 125 degree! Only 5 degree higher than me! I begged to redo but they said no. Then I saw the police. Oooh! ... Why are they walking towards me?

In contrast, the boy in *Audrey's* role describes the same scene at the Olympic try-outs as,

“DANG you caught me (punch) choke (police) you are under arrest.”

Liane, writing the same scene from *Michaela's* perspective, provides a detailed account of the gymnastics team try-outs:

Jim is first up. I watch as he does his high kick. 110 degrees. Good. He does a back walk over, then a back bend. Cartwheel, then a round off. He does a handstand, walks on his hands over to the front of the stage, hops back onto his feet, and into the splits. Cheers rose from the crowd. I think everyone clapped for this one. Next, Jason. He performed. Kick 90 degrees. Well, he can improve. Near the end, I realize he wasn't trying very hard. He can do much better than this. Audrey's turn. Kick, 120 degrees. Impressive, but not as good as mine. As she finishes her routine, I start warming up in case it's my turn next. But, nope. next is Laura. Her kick is 119 degrees. Ooh! Almost higher than Audrey, but not quite. Still, I can see she put in a lot of effort. Much better than Jason, and, even

better than Jims. 119 is quite nice! Awesome back walkover, even better front walkover. Ok y arial, but perfect back bend. Cartwheel, meh, then round off. Nice. Very nice. She climbed onto the balance beam and did all sorts of flips on it. Finally, she finished and it was my turn.

From the student's description, I can almost see the performances in my mind's eye. In the scene that follows after *Michaela* wins and collects her trophy, the student also plays with language:

Then, to my surprise, the police arrive. I see them go over to the coach. They talk for a bit. I turn my head to listen. "...kill Molakea alsho stume fron thee supermarket." Um... I think I heard wrong. "Stume?" "Alsha?" That's probably "also." Fron? Who knows. Most of all, who's "Molakea"? I guess I'll never know. Oh! I know! They're speaking another language! No. Probably not. As I said, I'll probably never know. Uh, oh! The police are staring at me! They are coming towards me with mad faces! The hand cuffs are pointing towards my hands! "I'm innocent!" I call to them. They ignore me... Suddenly I realize that they aren't coming for me. I look behind me, Audrey is there. The police pass me. They want Audrey. But why? She didn't poison me on purpose! Or did she... The police handcuff her and before you know it, she was off.

The character leaves the question of the villain open, creating a mystery situation which can be only be probed further by reading the other characters' accounts. Nonetheless, Liane writing from the *Michaela's* perspective continues past the last scene on the story template. She seems to be so much immersed in her character, she just cannot let go; she keeps writing further, reflecting and ruminating on what happened.

Both of the main characters, the villain and the heroine, retain their characterization throughout the story. There does not appear to be any evident growth in either of the characters. The heroine *Michaela* remains good and innocent, and the villain *Audrey* stays wicked until the end. For example, Deanna's villain *Audrey* does not give up even after being arrested:

“2 years in juvenile detention centre, terrible... I'm going to really get her [Michaela] back, here are my ideas:

-fill her tights with red ants

-tell the teacher she's crazy 'cause she believes she saw unicorns

-and much, much, more...

Only one of the students writing from the *Audrey's* perspective expressed some remorse for her actions: “Yes, mom I'll tell Michaela I'm sorry.” Interestingly, it was the only time when a parental figure, the mother, was mentioned in the story.

Prize giver – Coach. The character appears only in the beginning and the ending scenes of the story. The answer by which the Coach responds to *Audrey's* inquiry at the beginning is a trigger to the villain's jealousy, which sets the narrative in motion. The character also acts as an equalizer during the last scene of the story. During the process of creating the story with the class, it was not specified whether the coach was a male or a female. The students, two girls and four boys who wrote from the perspective of the coach, have decided on the Coach's gender themselves. In the students' writing, there is a stark difference between how boys and girls portray the Coach character, not only in *what* they say but also *how* they say it, as will be illustrated by the following examples.

Who is the Coach? Annie writes:

Hi, my name is Julia. I coach gymnastics because I've been doing gymnastics my whole life, and it is my dream job. I am 31 years old. I live in LA. I like to: paint, dance, sing, act, swim, and obviously gymnastics. I would describe myself as fun, and multi-talented. I coach only girls... My star students are Audrey and Michaela. Michaela is new. I coach basically everything. There is so much equipment, it is hard to keep track of.

Sally tells us:

Hello, my name is Coach Jessica. I am 20 years old. I live in L.A. I've been coaching gymnastics for 5 years at L.A. Gymnastics International. I am a coach for personal training. I coach 4 very talented kids. Their names are Dexter, Elisa, Audrey, and Michaela. Dexter is never here because of his ballet. So it's kind of a waste of money for him. But he is pretty good.

The Coach, as portrayed by the girls, talks about her students and shows her interest in their well-being. The boys portray the Coach character in the following ways:

Oren:

Hi, my name is unicorn-sitting-on-the-toilet-barfing-rainbow-pooing-out-candy. That's only my nickname. They call me that cause' every practice I wear unicorn costume. That's the reason I have 4 students. I'm 15 years old. Just call me Joe.

Andy:

My name is Coach Ian. I'm 59. Can't tell you where I live. I'm a weirdo, dumb and I can barely see. I have a helper named Bobby Joe. He helps me to see. He is invisible. My first year of gymnastics, I came out of the belly with a wheelchair. I love that things are blurry because everything is blurry. That's me.

Max only provides a list of the coach's characteristics: Attitude – grumpy; Voice – bear; Hobbies – watching sports.

In the boys' portrayals of the Coach, this aspect, *concern for the other*, does not exist; instead, the boys relish in humorous character descriptions and punctuate their narratives with coarse language. Oren's *Coach's* name, "unicorn-sitting-on-the-toilet-barfing-rainbow-pooing-out-candy," may seem at a first glance just silly. However, the student is actually referencing the other characters in the story – the unicorns, and their ability to create a rainbow on which they send Michaela home. Andy's *Coach* character, whether or not considered humorous, is definitely unusual; he is also described by the student as "weirdo, dumb," adjectives that are not present in the writing of the girls.

On the day of the Olympic try-outs, Annie, writing from the character *Coach Julia's* point of view, tells us:

I had to do so many preparations! For the police, I had to make refreshments! I am NOT a cook. I feel exhausted. When I see the police, I get scared. After the police left with Audrey, I did not know how to tell the whole tale.

Sally's character *Coach* reflects after *Audrey* is arrested at the try-outs: "I can't believe that Audrey got into juvie! I should visit. At the police station: "I'm here to visit Audrey. OH NO!" Sally's writing shows that the *Coach* is concerned about *Audrey*, and even goes to visit her in the juvenile home afterwards.

In the samples of the boys' writing, the last scenes are portrayed as follows:

Andy: "I can't believe Audrey got arrested. Good work Michaela! I think she won. So long, suckers." Jim writes in the bubbles of his story board: "AAAaaa, another day of teaching! Why is the police dude in the gym? "Audrey, where is she?" (police) "Right there." (coach)

“Dudes, Audrey has gone to Juvy ‘cause she tried to kill somebody.” The language the boys used, for example “suckers” or “dudes,” differs from the language the girls used in their accounts. In the boys’ writing there are no concerns expressed for the student who got arrested or further reflection on the situation that just happened.

Character Police. As noted previously, the police character was added to the story after the accomplice role was eliminated to prop up the structure and make the story work. The character appears sporadically throughout the story, as the events are being reported first by the witness on the train and later by the supermarket that recorded a theft being caught by the store’s camera. The police play a crucial role by entering the gym during the Olympic try-outs and bringing the story to its conclusion. The character of police was taken up only by the boys in the class.

Who is the police? The boys’ portrayals of the police are brief. Max provided a list: “Name - Larry Bikta; Family - Jimmy Bikta, Beth Bikta; Attitude – mean; Voice – dark; Hobbies – getting drunk.” Edan described his police character the following way: “Hi, I wanted to be a police because of the guns and the money. My name is Daisu...I live in New Zealand. I love riding motorcycles that’s why I am a motorcycle cop.” Another boy, Andy, wrote:

I’m police [...] and always in every case. I love tasing people and practicing shouting. I live in my mom’s basement. I get 1 cent a day. My name is police Andy. I never went to school that’s probably ‘wy me spillin isi sio bad’ [why my spelling is so bad]. I started when I was 19. I shot my first gun when I was 5 and now I’m 39!

Jim, writing in balloons in his storyboard, portrayed his character like this: “My name is Bob, I am a police officer. I like to arrest bad guys (like Audrey).”

The scenes where the police receive phone calls at the police station are summarized by Max into a list: “Two calls; Same person; Off – we should investigate.” Edan wrote, “I’m watching monster jam and I’m eating a donut and then I get a caller, a hobo man. Woman she pushed her off the train.” Jim, described the situation as, “One boring day at the office... then he gets a call. “You want to report a Macaroni thief? She has black hair? I know her. She was the one who tried to murder some dude.” Oren expressed the police description in two drawings of the character with guns, cigar and a pig’s nose.

In the finale of the story, Jim described the scene in speech balloons on his storyboard from all the scene’s participants: “Police gets into the gym. “Everybody freeze! Get on the floor! Where is Audrey?!” “Right there.” (Coach). “Who? Me?” (Audrey). Police: “You coming with me to Juvy.” Audrey: “Oh, poop!!” Coach: I trusted you!!!

As seen from the boys’ writing, there are not many reflections or musings; they get straight to the point, the action, and leave it at that.

Helpers/ the unusual creatures – Unicorns. The Unicorns were cast into the roles of the seven dwarfs in the *Snow White* and the six robbers in the story I told the class. However, the Unicorns possess magic abilities that the dwarfs and the robbers lack. They can heal injuries and create a rainbow with their magic horns, and even though they are not human, they are able to speak and understand human language. There are six unicorn’s stories, written by three boys and three girls (each unicorn story belongs to a different group) which enables gender-writing comparison.

Unicorn portrayals by boys. Scott writes, “I’m a unicorn that if I have a golden apple I become a super unicorn and I can fly and teleport.” Asher tells,

I'm the unicorn. My name is ChocoPeanut. I like playing the chocolate covered peanut guitar. All the other unicorns play an instrument. I heard that Leprdgummy played the Gummycordian. Sadly, none of us can fly...In this forest, anything is possible. (even farting rainbows).

Samuel, in his storyboard panel drawing, says in a text balloon "hi I'm a unicorn."

Unicorn portrayals by girls. Hana writes:

My name is Leprgummy. A friend uni-named when I was a little uni-baby. His uni-name is Chocopeant but I call him Choco. There are more [of us] but I only know Choco and Cutiefluffy but I call him Cutie. We eat puffle puffs during the day... We mostly just sing and dance. Want to hear?

3x uni uni unicorn woobou!

3x uni uni unicorn cute

3x uni uni unicorn we love you

3x uni uni cute and fluffy --!

When Michaela came, I was to get the golden apple. It is very rare. I needed it to help Choco he had a bad case of the furball. Coco said his cough was getting worse. Then Cutie saw the golden apple. We needed it [the golden apple]... it's good if you're sick.

In sum, Hana's unicorn needs to retrieve a golden apple from the tree *to help* the unicorn named Chocopeant to get better.

Another student, Marnie, portrays her character unicorn in the form of a list: "Name: cute and fluffy; Loves: helping other people and golden apples; Likes to sing the song uni uni unicorn and dancing; Favorite thing: anything, sparkly; Age: 5000 (unicorns are immortal)." Marnie's unicorn loves helping people and golden apples.

Gloria, in group five, portrays her unicorn this way:

Greetings I am a unicorn, my name is Cotton Candy. I am all pink with a set of invisible wings a rainbow, horn and a rainbow mane and tail. I don't know why my wings are invisible but they just are. I have a family of about 37 other unicorns and we protect the forest against the people who want to cut down our trees. Our most prized possession is a golden key. The key is put in to a special keyhole in a tree which puts a force field over our forest and then we are safe from all intruders.

Gloria's unicorn is ecology conscious. She cares about the environment.

In later scenes, Marnie's unicorn helps the protagonist, *Michaela*, with the golden apples: "I want to see if Michaela is okay. Pop oh no! She doesn't look like she's having a good time. "Are you all right?" She's on the floor maybe some golden apples will help." Marnie's unicorn revives *Michaela* with the golden apples when she gets poisoned and falls unconscious. In the boys' account of the same scene, Asher writes: "A while later, we came in on the same girl, but she looked like she ate so much mac and cheese that she would burst. So I healed her. She was proper-sized again." There are no specifics about how this was done. In the final unicorn scene, Scott writes: "Audrey is in jail and Michaela made the team and I'm a super unicorn and now I am the leader of the Brotherhood of unicorns... Yaya!!!"

Summary. As can be seen from the students' writing, the children were able to inhabit their characters, and to be present in the moment. The writing often felt like direct speech, a stream of consciousness pouring out onto the paper. The stories were inundated with sounds that were expressed in onomatopoeic words and through font sizing. Some students switched into a dialogue, sometimes in the middle of their story, writing in the form of a film script.

This study was particularly interesting as there were 13 girls and 9 boys. In some instances, boys and girls wrote from the same character's point of view and described identical scenes that were briefly mapped out on the story template. They used the same character and the same scene, yet there was very different imagining, interpretation and different use of language determined by each of the student's genders. As philosopher Nelson Goodman (1978) argues, there are different *ways of worldmaking*. For example, two musical performances can be wildly different, even when they conform to the same musical score, depending on which parts are accentuated or underplayed. Similarly, in the present study, the boys and girls worked from the same base-line story and its narrative structure so the differences here are shown in the interpretation of the base-line story by each gender.

Perhaps the gender differences could be best illustrated with the examples of unicorn's characterization. In the three girls' narratives, there was a *concern for the other*: the sick unicorn needs to be cured, people have to be helped, the environment needs to be protected and saved. Contemporary concerns are expressed within traditional narrative structures. In the three stories by the boys, the focus was egocentric: to be able to fly, teleport, become a super unicorn, to be part of a brotherhood. The same tangible difference also shows in the Coach stories written by both girls and boys. The Coach, as portrayed by the girls, talks about her students and shows her interest in their well-being. In the boys' portrayals of the Coach, this aspect, *concern for the other*, does not exist; instead, the boys relish in humorous character descriptions and punctuate their narratives with coarse language.

Table 4

Study C Without Digital Technology: Number of Emotions and Reflections in Characters' Stories

No. of Scenes	Word Count	Student's Name	Story Character	Total Emotions	Empathy	Total Reflections
10	768	Deanna	Audrey 1	11	0	23
10	360	Sara	Audrey 2	8	1	8
10	535	Elisa	Audrey 3	9	0	9
8	108	Todd	Audrey 5	7	0	4
9	386	Laura	Audrey 6	5	1	5 (TR)
14	1423	Liane	Michaela 1	13	4	36
9	468	Kira	Michaela 2	7	0	8
11	322	Natalia	Michaela 3	6	0	5 (script)
11	453	Kelly	Michaela 5	6	1	7
6	589	Hana	Unicorn 1	3	3	9 (TR)
6	374	Asher	Unicorn 2	1	1	4
5	273	Marnie	Unicorn 3	2	5	4
6	158	Scott	Unicorn 4	1	1	4
5	325	Gloria	Unicorn 5	3	2	7
6	18	Samuel	Unicorn 6	3	1	2
-	64	Max	Coach + Police 1	0	0	2 (list)
4	196	Annie	Coach 2 only	3	0	6
6	288	Sally	Coach 3 only	2	4	2
-	86	Edan	Police 4 only	1	0	2
10	313	Andy	Coach + Police 5	3	2	8
11	221	Jim	Coach + Police 6	5	1	5 (stb)
6	206	Oren	Coach + Police 7	1	0	1 (stb)

Participants: 22 students, 13 girls and 9 boys

Key: - (TR) – author talks to reader; (stb) – storyboard

Note: As the emotions in the students' stories were expressed in text and their drawings consisted mainly of maps and charts, no further break-down in the category of emotions was required.

The story length ranged from 18 words, (written in speech balloons on a boy's storyboard), to 1423 words. The highest number of reflections and emotions were contained in the two main characters, the villain Audrey's and the heroine Michaela's stories. Two of the student writers directly addressed the reader in their stories. As seen in a following table, the girls on average wrote more than double the amount of words than the boys, and the girls' stories contained almost triple the number of reflections and emotions compared to the stories written by the boys.

Table 5

Study C Without Digital Technology - Comparing Girls' and Boys' Average Counts

Average Number	Girls 13 girls	Boys 9 boys
Story Length	491 words	172 words
Total Emotions	6	2.4
Empathy	1.6	0.6
Total Reflections	9.9	3.3

Multimodal Work

Teaching students a grammar of modalities and how different modal expressions could be effective in the communication of ideas was not part of the project. Such an undertaking would have required an inordinate amount of time. For instance, in two Australian studies (Hill, 2010; Thomas, 2011), teachers (who received prior training) instructed their students first on how to use colour, composition, camera angles, gestures, sound effects and music to create meaning *before* letting the students embark on their own work. In the present project, there was no time for prior lessons and demonstrations of how to use different modalities to their best effect. In all three studies, the students were encouraged to express themselves any way they wished. Thus, the multimodality evolved naturally, as the students gravitated toward their preferred modes of expressions intuitively, by themselves.

The current research was framed by the questions: (1) How will multiple perspective storylines through multimodal representations shape students' storytelling? (2) How will students express the characters' points of views of the events, the characters' motivations and emotions in their individual work? (3) What can students' creation of the storyworld tell us about how they see their own reality and the world in which they live?

Study A

Using multimodal ways of expression was particularly effective for students with learning challenges. A similar finding was also reported by Lotherington and Paige (2017). The project gave these students the opportunity to tell the story differently and use their other skills and other intelligences (Gardner, 2008). In the interview, Brooke said, " I liked that I got to act. It helped me get ideas out without having to just write." Keisha agreed: "[It] made the writing more fun to act it out... 'cause you get to feel it." The students collaborated while doing their

original artwork. For example, Keisha, who liked to express herself with drawing, drew the images but let the other members of her group colour them.

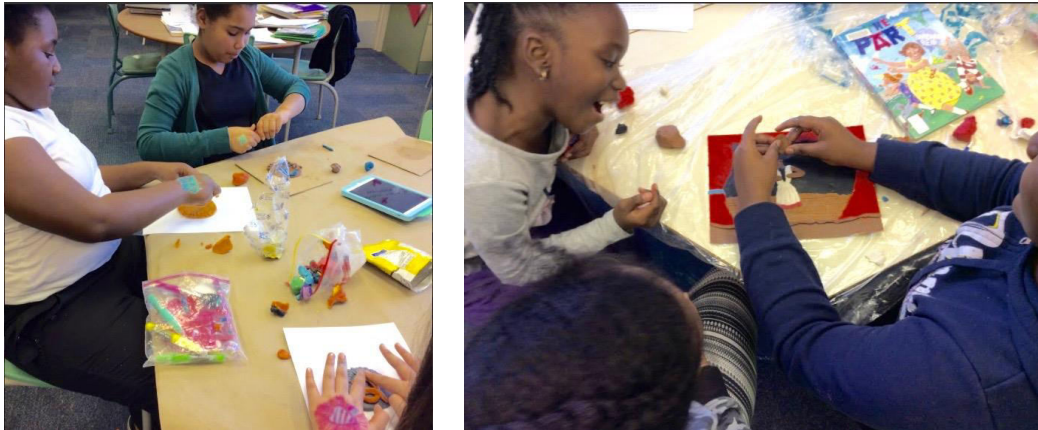


Figure 22. Students collaborating while doing the artwork.



Figure 23. Students' work on finished pages from their hyperstory. On the left is the cover sculpted out of plasticine. On the right, characters are drawn by Keisha and colored by the other members of the group.

Brooke who liked to express herself physically, coached the other students to act during the videotaping of their scenes: "I told her this is the first time you're flying. You look down, you're scared. You have to be excited! People don't get to fly!"



Scene 12

I'm walking out and I feel like I'm flying...
oh my gosh!



I'm flying with the birds!

This is so awesome, amazing and cool.
I'm finally out of the woods. Now I can go to
the competition.

Figure 24. Green Screen video procedure and the resulting page from the e-book.

About acting out the scenes in *Green Screen* videos the students said, “it was like we were there but in real life we weren’t...” Another student added: “The acting made me feel like I was actually the character.”

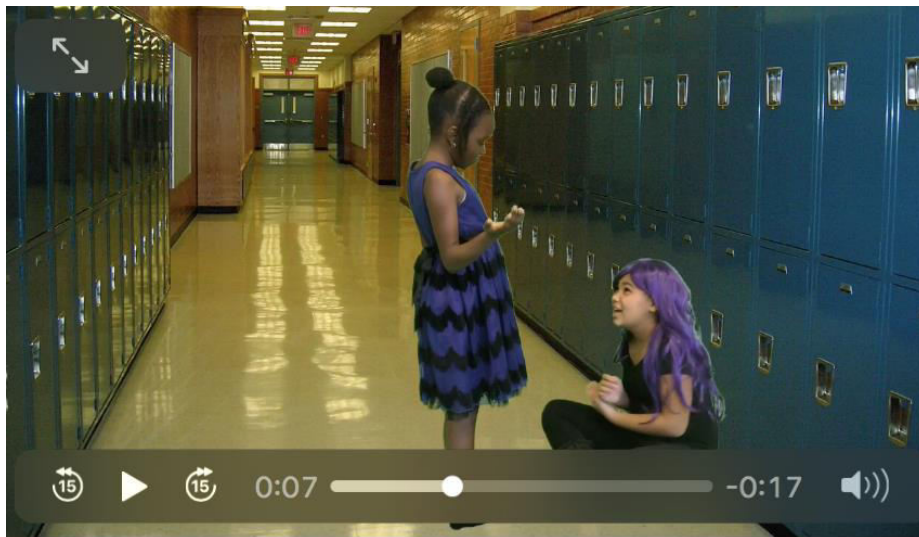


Figure 25. Screen shot from the video in the e-book.

The acting also supported the students’ writing: “I like filming the stories because it kinda explains the story a little bit better and I also like watching myself do it after...like to help me

write my storyline.” The students’ engagement in the project was visible as they worked on their stories outside the scheduled time, at recess, lunchtime and at home.

In the Study A hyperstory, the meaning making was expressed across the modes, visual, aural, embodied aspects of interaction and the interaction among them (Jewitt, 2013; New London Group, 1996). Digital technologies enabled new inter-semiotic relationships with one another as can be seen in pages from *The Competition* e-book. Multimodal pages included writing, image, moving image, sound, speech, gesture and posture in embodied interaction. Clicking on the hyperlink in the picture icon at the bottom of the page leads the viewer/reader (if she so chooses) to another character’s point of view in the scene that is happening at the same time. The interrelationships between all of these elements contribute to the broadening of meaning. The ability to view the scene from multiple perspectives allows for a new (considered) perception of the viewer/reader to emerge. The following are three examples of this situation:

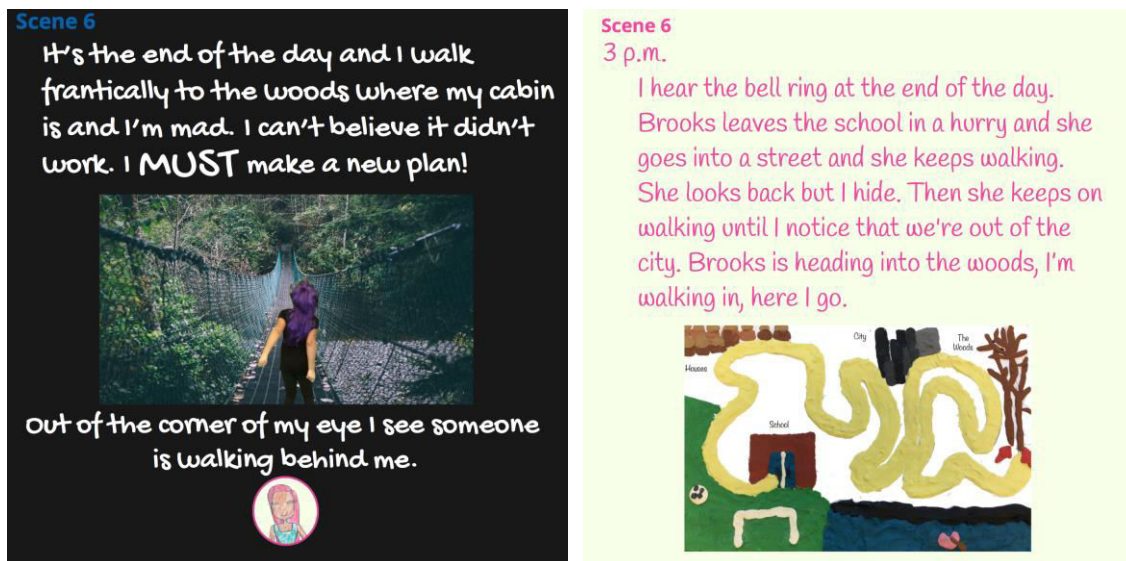


Figure 26. On the left is character Brooks’ page. On the right is Amber’s page that is describing what is happening to her at the same time as Brooks.

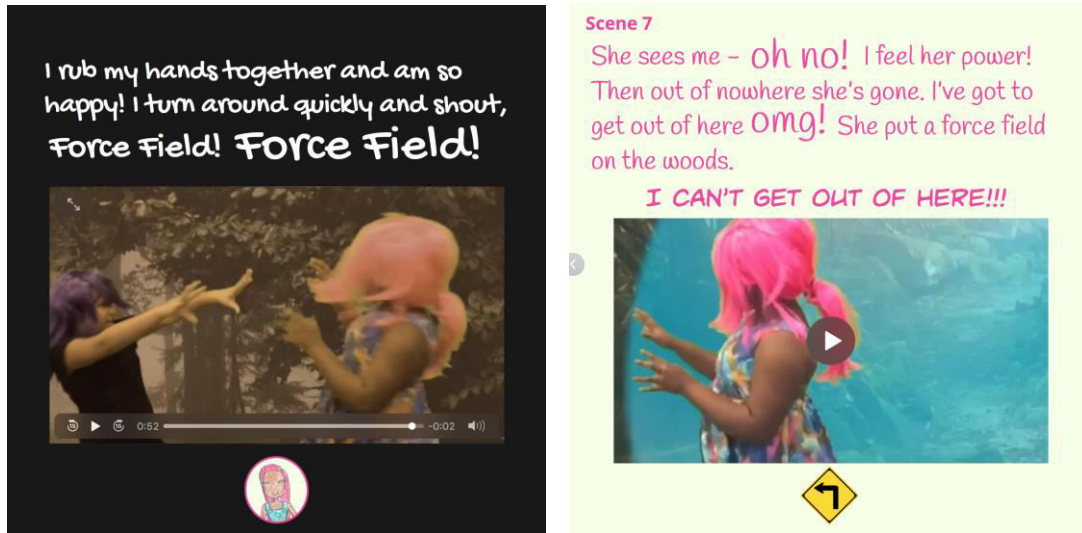


Figure 27. Same time, same place but two different perceptions. What will be the perception of the viewer?

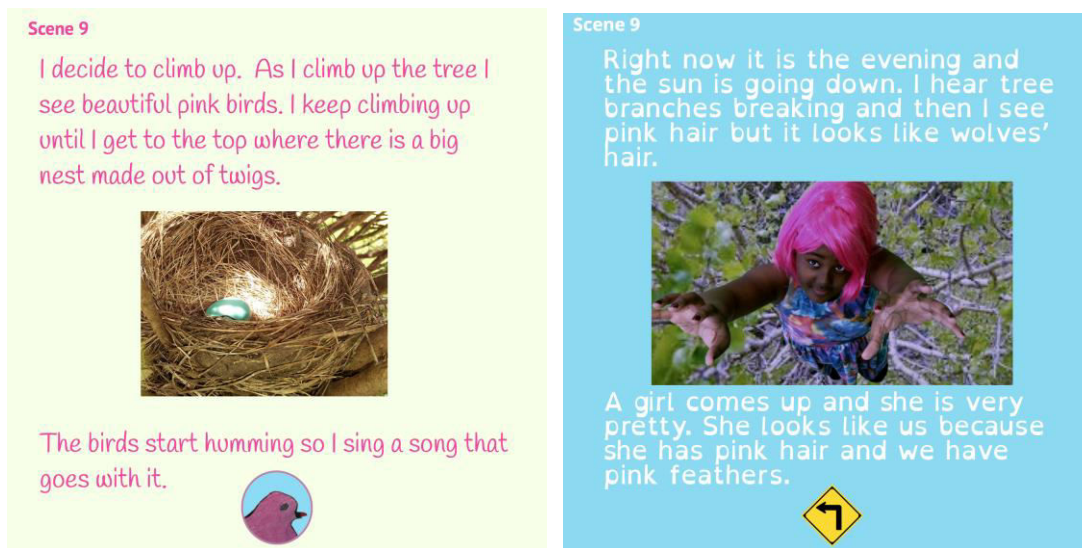


Figure 28. On the left is character Amber's page. On the right is the page of the bird, describing the same situation at the same time. (The icon at the bottom of the page indicates to the reader that he/she can return to the previous page of the other character's story.)

The digital technology also allowed for combining visual elements created by hand and elements found on the Internet in innovative ways, as seen in the Figure 29.

She went to the wicked woods. I'm walking more...where is she going? I am clueless so we're still walking in, we're getting deeper in the woods.



I'm tired and have no energy.
I snuggle in the birds' nest and fall asleep.



Figure 29. On the left, photograph of the student actor in character is combined with her drawing. On the right, a photo of the student actor is merged with an image of a nest the student found on the Internet and it is superimposed with graphics of the birds.

The colour pink figures predominantly in the study. The heroine *Amber* has ‘sugar plum pink hair’ and thinks it is the “best pink in the world”. All the birds have pink feathers. Ms. Penelope also loves pink and wears pink shirts and skirts. The colour pink may be the students’ personal preference but they may also associate the colour with *goodness*.

By combining linguistic, visual, auditory and gestural modes, some of the pages in the hyperstory literally came alive and provided a new, enriched experience for the viewer/reader. Here are some examples:

Study B

Images. Because the students in Study B were considered *good writers* and they enjoyed the writing process, to express themselves visually was not tempting. The students did not want to draw because they felt they were *not good at it*.

Once writing mechanics and literary accomplishments have advanced sufficiently (as they ought to have by the age of nine or ten), the possibility of achieving in words what was once attempted in drawing comes alive: the stage is set for decline - or demise - of graphic expression. (Gardner, 1980, p. 155)

Only one student confessed that she liked to draw, and a few others were persuaded to make some sketches after I assured them that I would not be judging their skills.



Figure 32. Student's drawing of the character's loneliness in school.

Zoe's drawing expressing loneliness, says it all. Her character (rendered in green) is standing alone in an empty space in contrast to a tightly knit group of girls standing in proximity,

who seem to be interacting with each other and having fun. Two lines drawn by ruler in perspective and the square wall with the window at the end tell us it may be a hallway in school. Somehow, in its simplicity (or perhaps because of it), the drawing perfectly manages to convey the pain one may feel when one is an outsider and is not fitting in.

Two sketches that students made on the last day of the school (after I persuaded them to at least try) show two approaches to drawing that are typically associated with their age: an attempt to render realistically and cartooning (Edwards, 1999; Gardner, 1989).

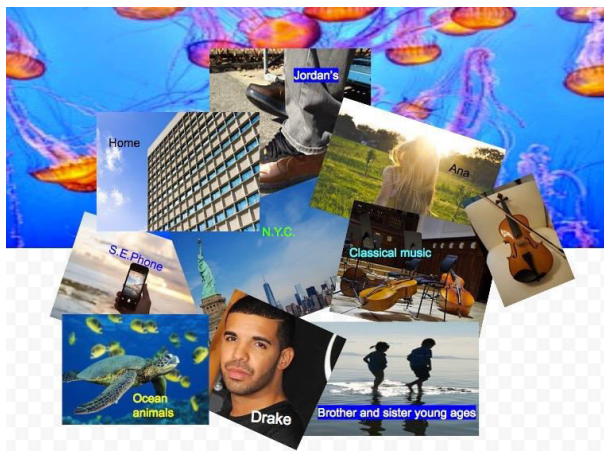


Figure 33. On the left is Tiffany’s picture of the character Steven. On the right is Victoria’s drawing of the Principal.

I was struck by Tiffany’s almost scientific method with which she approached her drawing. First, she carefully drew the shape of the face. Then, using a ruler, she divided the face into sections and measured and marked the distance where she would place the eyes, eyebrows and nose so the face would be perfectly symmetrical. Tiffany was the student who rewrote her entire *Steven* story after I insisted that the students within her group needed to make the events in their story fit so the story would make sense. To rewrite *Steven* story, Tiffany *had to read* Zoe’s text on a computer. Now, being aware that Zoe included a drawing of *Steven* within her text,

Tiffany rendered the portrait of *Steven* with shaggy reddish hair to match Zoe's drawing so that their images would not clash. Her former individualistic approach to her work was transformed to one of being a team member.

For the most part, the students in Study B a) were picking up generic images from the Internet to include in their stories such as *principal's office*, *shopping mall*, *computer rooms* and *fast food* images which did not add much meaning to their stories. Several students used enlarged emojis and put them into their scenes as *the illustrations* that emphasized the emotions their characters felt in the situation. I did, however, show the students some samples of digital collages and suggested that they could make a collage to show their characters' interests. Inspired, several students did that in their stories. Some students also produced a *school newspaper* as a separate document to be hyperlinked to scene eleven of their story.



St. Roberston News

May 23, 2016

Straight A Student "EXPOSED"

By ROLF SARTORIUS

Recently we found out that Sydney Marshall the straight A student is cheating on a student named Zachary Martin the head of the football team. Students say that Sydney is innocent, some say she is not, while Zachary on the other hand is confused. Let's see what all this mess turns out to be. find out the next time you read our "St. Robertson News". Oh by the way buy my new single "SweatPants" on itunes for only 9.99.

Hope you enjoyed this week with Rolf Sartorius. See you next week on St. Robertson News

Now we have other articles by other students.

Figure 34. On the left is a digitally assembled collage of Steven's interests made from photographs Zahara found on the Internet. Image on the right shows the school newspaper article written and designed by the same student.

What information about *Steven* do we gather from the collage? It appears that *Steven* lives in New York city in an apartment high-rise. He has two younger siblings, brother and sister; the sister is the youngest one. The close-ups of *Jordan* shoes and an *iPhone SE* tell us that *Steven* probably has them both and treasures them. There is a picture of a girl called Ana that *Steven* must like. A photo of rap artist Drake indicates that *Steven* probably listens to his music. However, there are also images of classical string instruments to inform us that *Steven*'s music preferences are much wider than rap music. All of the images are superimposed on top of a big image of an ocean with floating creatures. As a matter of a fact, the entire collage is framed by the ocean images in all four corners so the images must hold some importance for *Steven*'s character profile. They are there to inform us about the complexity of *Steven*'s character and *Steven*'s dreamy and sensitive nature. The collage encapsulates what Zahara told us in her writing but the addition of the visual image to her story provides us with more details and enlarges the meaning of her narrative telling.

Figure 34 also displays the *St. Robertson News* article, which serves as a breaking point in the events of the students' story. Zahara's writing style and her sensational title "Exposed" mirrors the tabloid journalistic style that is attention-grabbing and ignites controversy. Zahara also feels compelled to include an advertisement in her article: "Oh by the way buy my new single "SweatPants" on itunes for only 9.99." This shows us her awareness, as well her need to conform to current cultural practices awash with constant advertising.

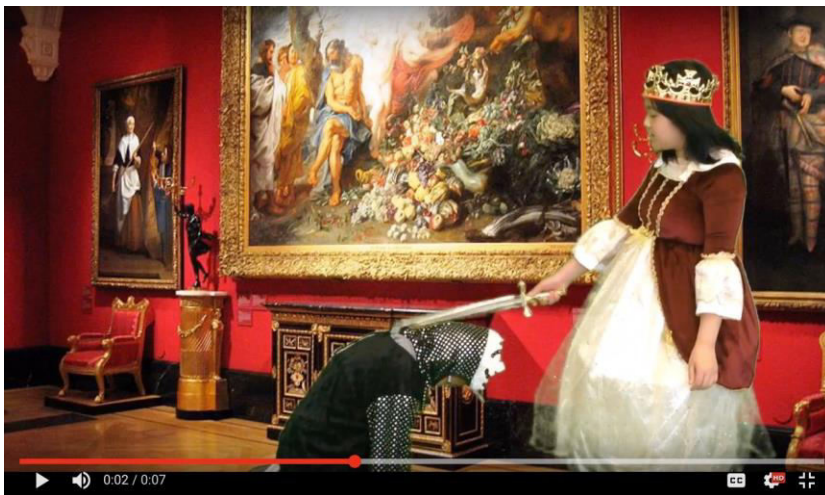
The story in Study B b) set in medieval times allowed for a more interesting choice of images. The student who drew the dragon and also the portraits of the characters she was working on, used an Internet dragon's image as a reference, rather than including the image itself.



Figure 35. The Internet photo reference and student's sketches

This student was the only one in Study B who confessed that she liked to draw. She used the Internet as a tool, a reference source in a similar process used by professional artists and illustrators. Her drawing shows attention to details and concern to render the image just right.

Picking an image directly from the Internet (rather than creating their own) is not entirely without merit. The image has to be chosen with a purpose; it has to enhance the text or to represent the setting and the location (such as the background of the videos) to fit the story. Similarly, an art director/movie maker has to scout locations and choose the right ones in which to film the scenes. Here are some examples of the backgrounds the students chose for their story:



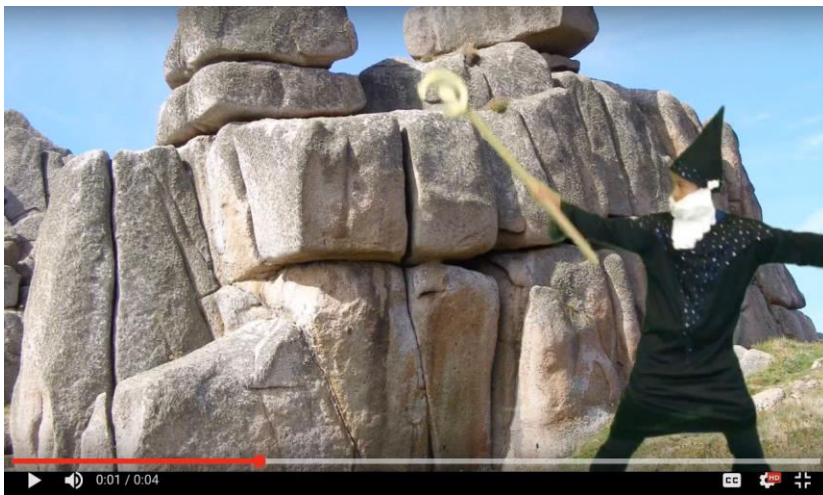


Figure 36. Some of the students' choices for green-screen 'locations' for their videos.

Avatars. When the students created avatars for their characters, they did not compose them in an arbitrary way. They consciously matched them to the written descriptions in their texts. For example, in her text, Laura described her *Ana* character as having straight black hair and blue eyes that looked like an ocean. Then she created *Ana*'s avatar accordingly. Charlize described her *Sydney* character as a straight-A student, winning awards. She chose for the background of her avatar a library filled with books to indicate that *Sydney* is smart. Eric, as another example, had a definite *look* for his character *Steven* in mind. It could be seen in the hairstyle he drew in his initial sketch and then chose for his digital avatar.



Figure 37. Eric's sketch and avatar of Steven.

Adele designed her avatar of *Zach* to match the way she made the character speak. Her character *Zach* talks in contemporary boy's lingo and his look, *hip* and *cool*, reflects that: he wears stud earrings, a chain necklace and a T-shirt. In a way, *Zach*, as created by Adele, is a stereotype of a boy that girls traditionally seem to be attracted to: cute, worldly, both in looks and speech. Maya, on the other hand, made her character *Zach* look clean and romantic by wearing a crisp white shirt and holding a rose.

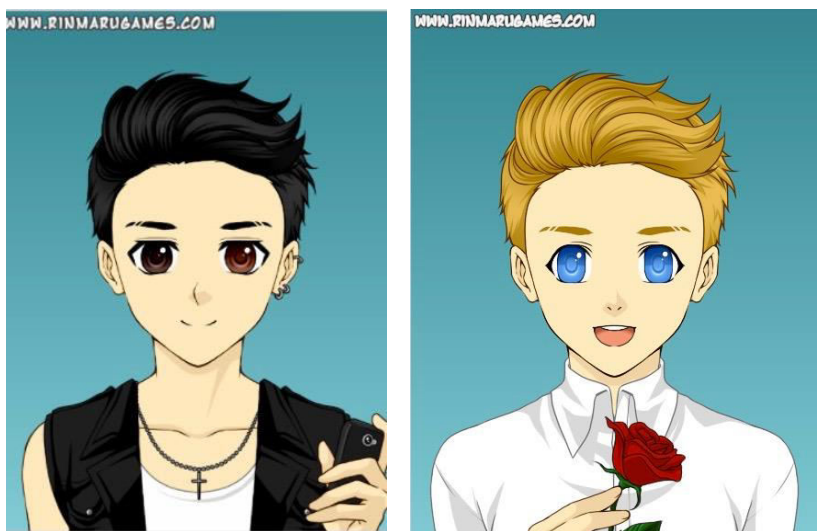


Figure 38. Adele's Zach on the left; Maya's Zach in on the right.

Adele's description of the school principal as old, strict disciplinarian comes across in her created avatar, composed with grey hair, black turtleneck dress, pen poised in hand and with the background of the school hallway.



Figure 39. Adele's principal; Screen shot of video - principal talking to Steven.

Acting the scene in the principal's office, the students dressed accordingly to match the appearance of their principal's avatars. Even though the digital avatars students created were composed from website elements drawn in a distinctive style, the students still had the opportunity for their individual expression. They were able to manipulate existing elements and make their characters' avatars their own.

After the videotaping, the student told me that she modelled her school principal in her acting, copying the Principal's note-taking when she is talking to students in her office.



Figure 40. Photos from making video with green screen.

In Study B b) set in medieval times the appearances and the personalities of the villain and of the hero were *not* described in the boys' written text. However, the boys were able to show the characters' personas by the way they composed the characters' digital avatars.



Figure 41. Left: the villain composed by Anton; right: the hero composed by David.

Both images reflect the villain's and the hero's archetypes. Anton tells us that the character is evil by choosing blood red for *Jarod's* clothes and the background of the sky that seems to be boiling and on fire. The character has dark spiky hair and a beard and his eyes are almost cat-like, much narrower than those of the hero in the image on the right. *Jarod's* mouth is in a grimace and hard and there is a bleeding scar on his cheek. The combination of the cat-like eyes with the grimace creates a look of determination, as if the character were saying, "I'm going to get you".

David's portrayal of the hero *Thomas* (Figure 41) adheres to *Snow White's* characteristics, as good and innocent: the character has soft, wavy hair, his mouth is open and he is gently smiling. The eyes are round, looking straight at the reader; the light grey shirt is open, making the character look vulnerable. The background composed of green trees and blue sky

gives a feeling of calmness. Only the spikes attached to the character's hand give away that the hero *Thomas* is a fighter. However, to show that the hero is good, the spikes are colored gold. When I asked the boys to tell me why they created their characters that way, they could not explain it. They lacked the words to express the reasons behind their choices. There is a need for explicit teaching of multimodal grammar in school so that children are able to better articulate themselves about their work (Thomas, 2014).

Study C

In Study C, which was produced entirely without digital technology, the images and sounds, as previously noted, were often incorporated within the text:

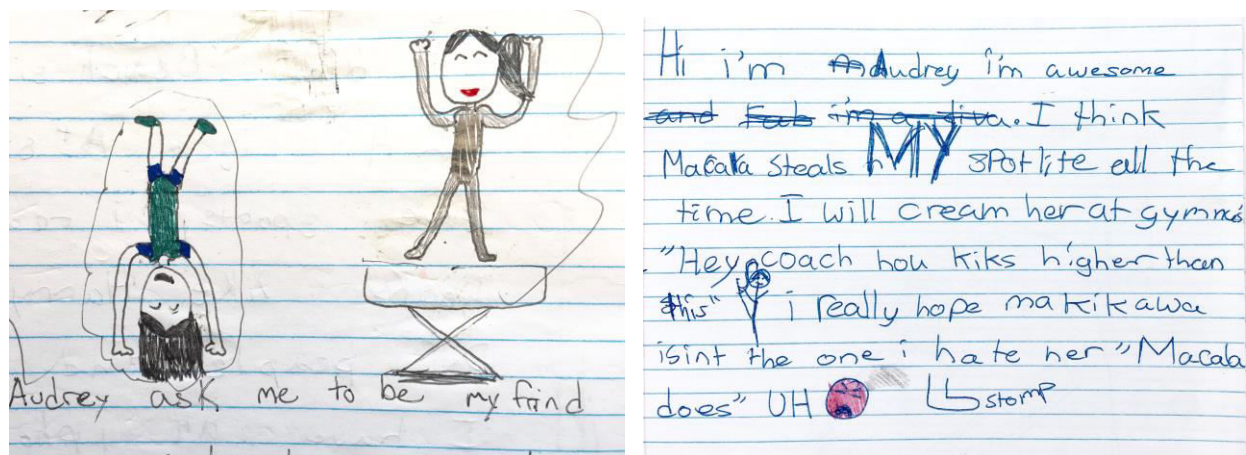


Figure 42. Multimodality within the students' text pages; the bottom line on the right page shows the character's angry response: red face and the *sound effect* of a stomping foot.

The images students created were mostly from the *magic realm* of unicorns rather than portraying realistic situations from the story. The children's preference for drawing pictures from the *magical realm* of their stories was previously observed in my study (Charles, 2009).

Both Asher and Hana made drawings of the *Unicorn Land*. Interestingly, even though their pictures were demarcated with a line around, the objects inside were a mixture of things seen from either an aerial view or straight-on elevation.

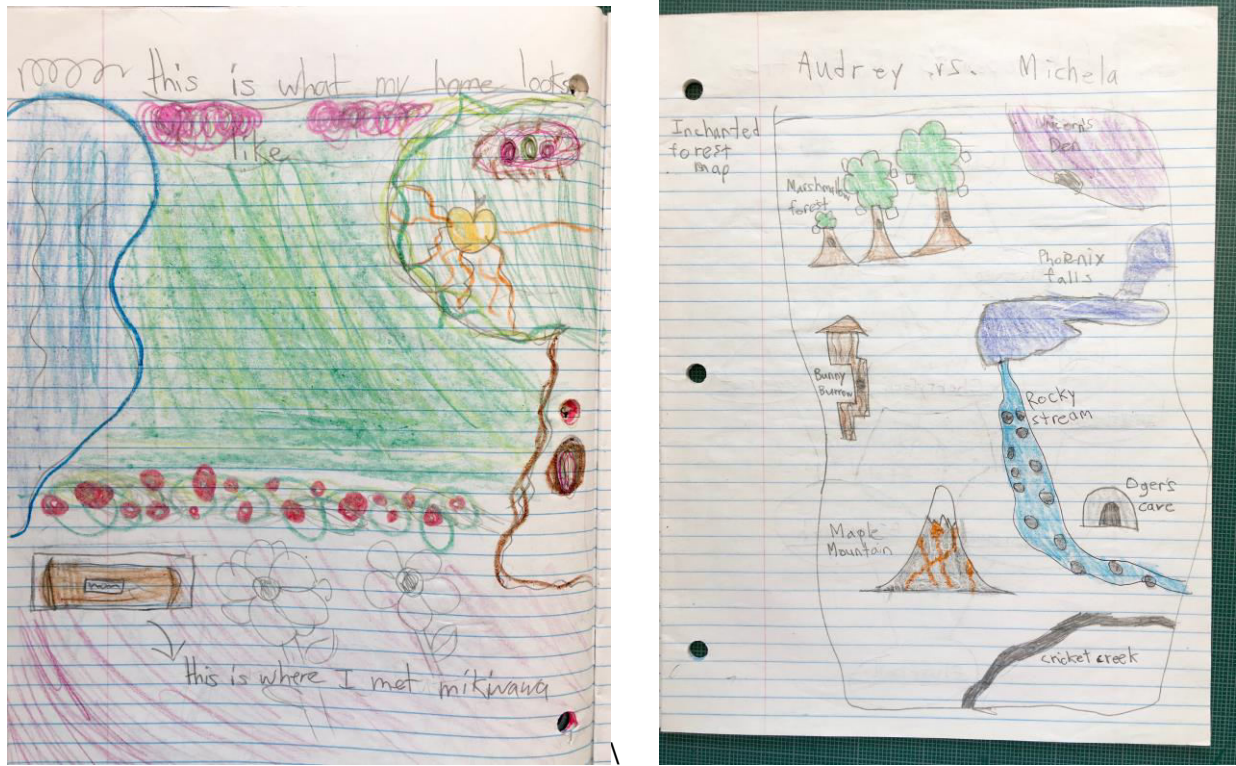


Figure 43. Students' drawings from the *magical realm* of their stories. On the left is Hana's drawing; on the right is Asher's picture.

In Hana's drawing, titled, "*this is what my home looks like*", the river and red flowers are shown from above, but the tree with the keyhole is seen from the side view. There is a keyhole in the tree trunk and a golden apple that shines, which is indicated by radiating lines. We see a bird's nest with eggs in the tree and on the bottom left appears to be the log on which *Michaela* (Mikiwana) floated in the river and then discarded. Asher's map contains a similar mix of viewpoints. *Rocky stream* and *Cricket creek* are seen from above, while the *Marshmallow forest*, *Bunny Burrow*, *Oger's cave* and *Maple mountain* are drawn from the side view.

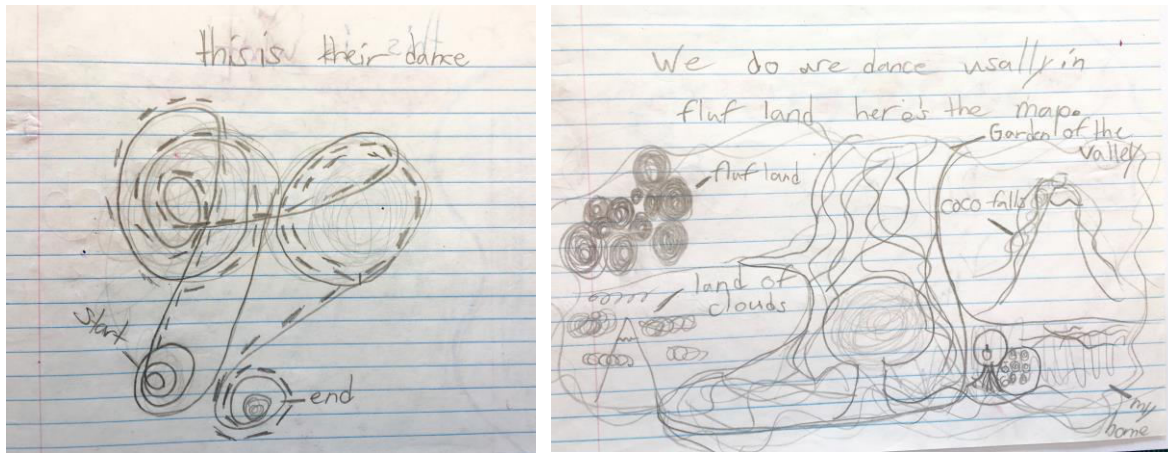


Figure 44. Image on the left: graph of unicorns' dance; image on the right: map of *fluf land*.

In another drawing, Hana graphically represents the unicorns' dance from start to finish. On the right is the *fluf land* where the dance is taking place. There is also the *land of clouds*, *coco falls* and trees from the side view. It appears that the unicorn dance in *fluf land* and by the tree with apple is indicated by an aerial series of circles shown from above.

Asher also created family trees for unicorns and bunnies. Clearly, inventing names for them was fun for him to do.

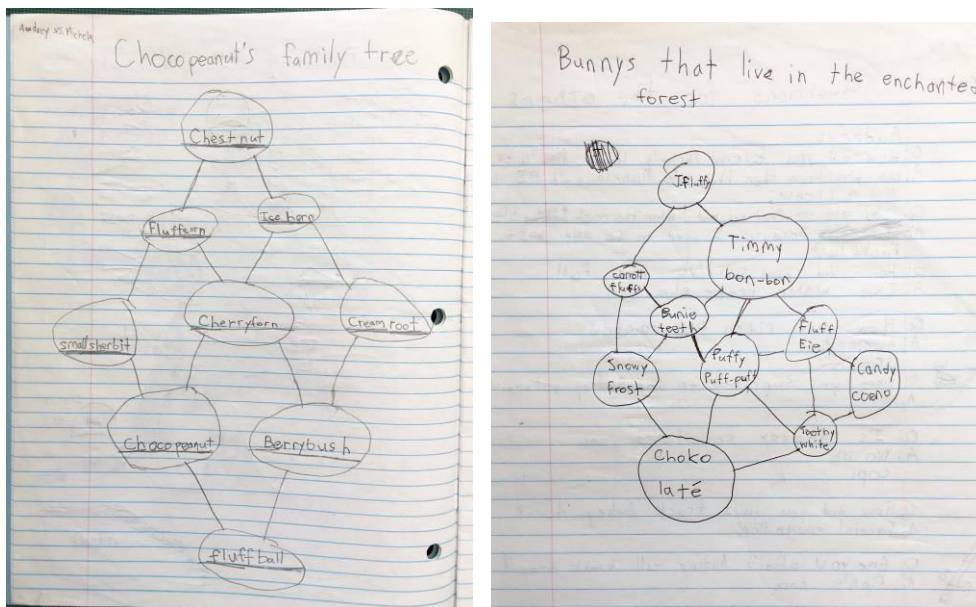


Figure 45. Asher's family trees of unicorns and bunnies.

Gloria’s unicorn picture is telling her whole story. We see the unicorn with a rainbow mane, tail and horn. The unicorn has a golden key hung around its neck and stands in front of the special tree which has a keyhole in the trunk. (The key fits in the keyhole and creates a force field to protect the forest from intruders.) Behind the big unicorn are two unicorn babies, which Gloria calls, “our youngest siblings” who in Gloria’s story play with the key and the key ends up high in the tree.



Figure 46. Gloria’s drawing of the unicorn with siblings.

The inspiration for the inclusion of unicorns and the rainbow in the story most likely came from the bestselling picture book, *Uni, the Unicorn* (Rosenthal & Barrager, 2014), and from the proliferation of the YouTube video, “Pink fluffy Unicorns Dancing on Rainbows Song” (FPMV: “PFUDOR”, 2013), which by October, 2017 had over 39 million views. In the book’s illustrations, there is a pink unicorn and the forest has purple trees. The girl and the unicorn slide

down a rainbow together. In the YouTube video, the unicorn is pink and fluffy, as it is in the description in the stories of several students.

During the story's creation with the class, the appearance of unicorns came to me as a surprise. In the story, the heroine was floating in the river so I anticipated that she would encounter some water-related magical creature. I was unaware at the time of the *unicorn* phenomenon and neither was the teacher. It appears that impact of popular culture subverted the *story's logic* (when a thought arises from the previous idea) and inhibited the students from coming up with suggestions of their own. However, the lyrics for the Unicorn song the students created are different than from the YouTube video and the graphic representation of the unicorns' dance appears genuine and original. Popular culture may have brought the unicorns into the students' story, but it also inspired the students to create their *Unicorn world* and give the unicorns agendas (such as protecting the forest) that had nothing to do with the text in the picture book.

Another popular cultural effect is seen in Sam's storyboard when he uses the expression "Cowabunga!". The term is often associated with the character Bart from the American animated television series *The Simpsons*, and was mostly said on the show after it had been used as a slogan on the T-shirts. However, the word "Cowabunga!" comes from Ninja Turtles' movies (which, in turn, had been co-opted from the *Howdy Doody Show*, a television series from the '40s and '50s).

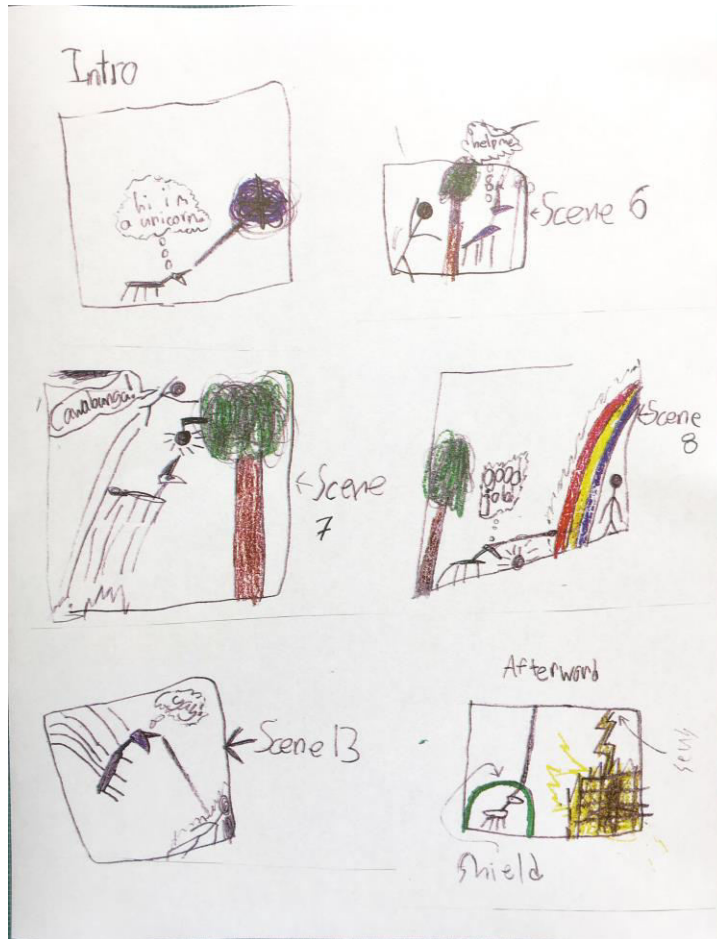


Figure 47. Samuel's unicorn's story in panels.

Students' collaboration within the unicorns' storyworld. There were six unicorn stories in Study C that were created by three boys and three girls. In each of the six groups in the study, one student wrote a unicorn story. However, there appeared to be a collaboration of a sort, a cross-pollination of ideas both in text and images. For example, Hana used Asher's unicorns' names and both students drew map of the unicorns' land. Hana and Marnie both created a lyric for the unicorns' song and graphic representations of the unicorn dance.

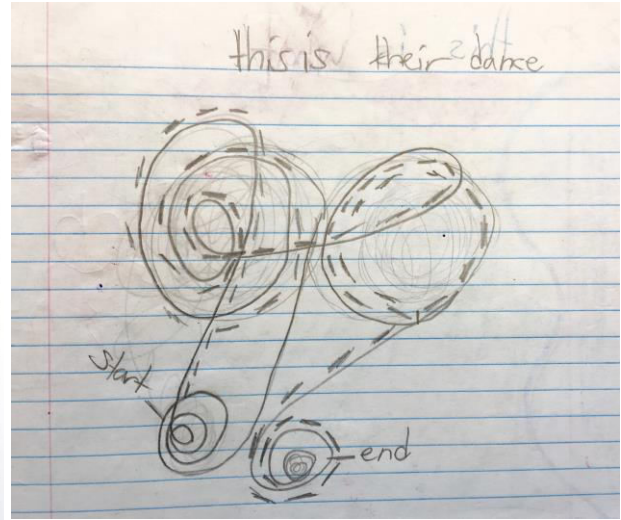
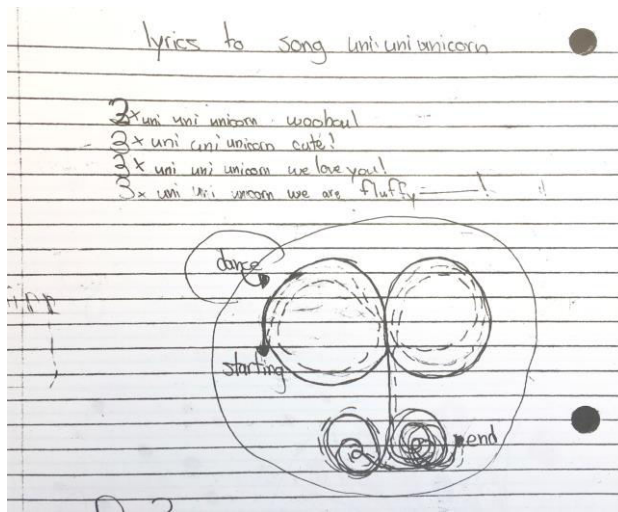


Figure 48. Dance of the Unicorns as drawn by two students belonging to different groups.

In retrospect it makes me wonder: how different would the outcome have been if digital technology were available in the classroom? What could have been accomplished if additional time were provided for working on the project? The song could have been recorded; the dance could have been performed and videotaped; so much more could have been added to the students' stories to fulfill the objectives of the curriculum.

Chapter 5

Discussion of Results

This project investigated the questions: (1) How will multiple perspective storylines through multimodal representations shape students' storytelling? (2) How will students express the characters' points of views of the events, the characters' motivations and emotions in their individual work? (3) What can students' creation of the storyworld tell us about how they see their own reality and the world in which they live?

The discussion is divided into five sections. Section 1 discusses the class-created stories and students' recasting of the archetypal characters. Section 2 looks at students' perspective-taking and their writing style. It also points to the findings that emerged from the three studies. Section 3 and Section 4 look closely at those findings and explore them further. Section 5 discusses multimodal storytelling.

Section 1 - Narrative; Class-created Baseline Stories

In all three studies, the students made their stories' main protagonists a bit older than themselves. They ranged from 13 to 17 years of age (the only anomaly was the villain in Study B b) who was 25 years old). The fact that the students made their protagonists just a little bit older than themselves suggests the students' desire to mature and be at that age themselves. The cause of the villain's jealousy was the hero/ine's superior talent. In Study A, it was a singing ability; in Study B b) the skill to fight; and in Study C it was a physical agility in gymnastics. In Study B a) the cause of the villain's jealousy was the heroine's popularity in high school, but it was merely hiding the *real* villain's jealousy underneath that concerned a romantic relationship.

During the story-creating process in the class it was important to allow some flexibility so that the story bones could expand or contract organically. The story emerged from the individual

relationship between the creators and the story's structure, and this symbiotic relation gave rise to the story's personal meaning for the creators. Consequently, in each of the three studies the story mutated into a different shape from the original story's guiding template. The Study C template for the story, *The Incident*, appears different from the others because students eliminated the role of the *accomplice*. In this template, the colour purple was used for the additional character the students created. The templates are seen in the Figure 49.

SYMBOLS OF PROPP'S ACTIONS	CHARACTERS	BROOKS	RY	AMBER	BISS	STAVROS
1. Initial situation	Scene 1 Introduction: "About me"					
4/5. Villain asks questions, gets the information	Scene 2 Brooks asks question Mr. Pentecost answers					
6. Villain tricks the hero, assumes a disguise	Scene 3 Brooks makes a plan Cooks a potion					
7/8. Hero/ine is fooled and takes away	Scene 4 Brooks uses try to pass the potion to Amber Amber is suspicious					
Repeat motif: 4/5. Villain asks questions, gets the information	Scene 5 Brooks finds out her plan failed					
9/10. Hero/ine goes or is sent on journey	Scene 6 Amber follows Brooks into the woods					
6. Villain tricks the hero, assumes a disguise	Scene 7 Brooks casts a spell to keep Amber in the forest					
6. Villain steals the object or abducts a person	Scene 8 Amber is trapped in the forest by Brooks' spell					
11. Heroine meets magical or unusual people	Scene 9 Amber meets the birds					
TEST	Scene 10 Amber feeds the birds					
14. Hero/ine is rewarded	Scene 11 Birds teach Amber high notes that break the spell					
20. Hero/ine returns	Scene 12 Amber returns to school					
TASK Or TEST	Scene 13 Singing contest in school					
30. Villain is punished	Scene 14 Brooks drinks the potion by mistake she loses her voice					
27/31. Hero/ine is recognized, rewarded, and/or is married	Scene 15 Amber wins the competition					
1. Theme (additional symbol for ending of story)	Scene 16 Afterword Questions by the characters - I wonder what happened...					

SYMBOLS OF PROPP'S ACTIONS	CHARACTERS	ANA	STEVEN	SHYRRE	PRINCIPAL	PAUL
1. Initial situation	Scene 1 Introduction: "About me"					
4/5. Villain asks questions, gets the information	Scene 2 Ana finds out that Sydney (the most popular girl in school) is interested in Zach, she is jealous of her.					
6. Villain tricks the hero, assumes a disguise	Scene 3 Ana makes a plan, tells Steven what to do she wants Sydney to be expelled from school.					
7. Hero/ine is fooled	Scene 4 Steven tells Sydney to go to school at night for a meeting.					
Repeat motif: 4/5. Villain asks questions, gets the information	Scene 5 Sydney is caught by janitor who informs principal next day that she was trespassing.					
2. Request or warning to the hero/ine	Scene 6 Sydney is called to principal's office. Then, the principal talks with Steven.					
5. Villain asks questions, gets the information	Scene 7 Ana finds out her plan didn't work.					
6. Villain tricks the hero, assumes a disguise	Scene 8 Ana makes 2nd plan to embarrass Sydney on social media.					
9. Hero/ine goes or is sent on journey	Scene 9 Popular kids (Sydney and Zach) go to a shopping mall. Ana and Steven follow them. Ana takes photos of Sydney and Zach.					
10. Villain is punished	Scene 10 On a school computer, Ana and Steven photoshop the picture and replace Zach with Steven.					
7/8. Hero/ine is fooled	Scene 11 The photo appears in a school newspaper. Steven goes to school thinks Sydney is cheating on Zach.					
20. Villain is exposed	Scene 12 The principal finds out that Ana has been using the computer for cyberbullying.					
30. Villain is punished	Scene 13 Ana and Steven are expelled from school.					
1. Theme (additional symbol for ending of story)	Scene 14 Sydney and Zach don't talk but are still together. Zach and Steven are no longer friends. Scene 15 Afterword					

Study A 'The Competition'

Study B a) 'High School Madness'

SYMBOLS OF PROPP'S ACTIONS	CHARACTERS	JAROD	WILARD	THOMAS	KNIGHTS	QUEEN
1. Initial situation	Scene 1 Initial situation Introducing myself "Something about me"					
4/5. Villain asks questions, gets the information	Scene 2 Jarod is jealous because at a tournament, the queen announces the best fighter is Thomas					
6. Villain tricks the hero, assumes a disguise	Scene 3 Jarod tricks the wizard to come an accident so Thomas will break his arms					
7/8. Hero/ine is fooled and takes away	Scene 4 The wizard summons a rock to fall on Thomas. It becomes a pebble.					
9/10. Hero/ine goes or is sent on journey	Scene 5 The wizard tells Thomas to run away and find another village. Thomas walks into the forest					
11. Hero/ine meets magical or unusual people	Scene 6 Thomas encounters 4 knights on horses in the woods. They tell him they need "X" to join them. The way he was chosen by the Queen					
TEST	Scene 7 Knights ask Thomas to fight or leave a weapon to prove he is a good fighter					
14. Hero/ine is rewarded	Scene 8 The knights reward Thomas by giving him the dragon and they ask him to join them as the "X" one					
Repeat motif: 4/5. Villain asks questions, gets the information	Scene 9 Jarod is told to spy that Thomas is alive in the forest and with a group of knights					
6. Villain tricks the hero, assumes a disguise	Scene 10 Jarod plans to attack Thomas and the group of knights					
16. Hero/ine confronts the villain (or his accomplice)	Scene 11 Jarod and his knights ambush Thomas and good laughs to the woods					
17. Hero/ine is wounded	Scene 12 Thomas is injured by an arrow and 2 knights are killed, only 2 members of the group are left					
23. Hero/ine is unrecognized	Scene 13 Thomas returns with 4 remaining good knights and they fight the bad knights in the stavehall of the Queen's castle					
TASK Or TEST	Scene 14 Thomas returns with 4 remaining good knights and they fight the bad knights in the stavehall of the Queen's castle					
30. Villain is punished	Scene 15 Jarod is sent to dark dungeon and he dies					
27/31. Hero/ine is recognized, rewarded	Scene 16 Thomas is rewarded by the Queen					

SYMBOLS OF PROPP'S ACTIONS	CHARACTERS	AUDREY	MICHAELA	UNIVERSITY	DAVID	PIERRE
1. Initial situation	Scene 1 Introduction: "About me"					
4/5. Villain asks questions, gets the information	Scene 2 Audrey asks the coach the information					
6. Villain tricks the hero, assumes a disguise	Scene 3 Audrey makes a plan, pretends to be Michaela's friend, invites her for a trip					
7/8. Hero/ine is fooled and takes away	Scene 4 Going on a train trip					
9. Emergency	Scene 5 Falling into a river					
9/10. Hero/ine goes or is sent on journey	Scene 6 Meeting unicorns					
TEST	Scene 7 Hitting unicorns					
14. Hero/ine is rewarded	Scene 8 Unicorn's reward - transporting Michaela home on a rainbow					
Repeat motif: 4/5. Villain asks questions, gets the information	Scene 9 Audrey finds out Michaela is back					
6. Villain tricks the hero, assumes a disguise	Scene 10 Audrey's 2nd plan; (both in a supermarket); preparing poisonous macaroni					
7/8. Hero/ine is fooled	Scene 11 Audrey being macaroni to Michaela					
9. Emergency	Scene 12 Michaela eats the macaroni and faints					
11. Heroine meets magical or unusual people	Scene 13 Unicorns arrive and revive Michaela					
TASK Or TEST	Scene 14 Obstacle trip-outs at the gym					
30. Villain is punished	Scene 15 Audrey is arrested and told she will be put in a juvenile home					
11. Hero/ine is recognized, rewarded, and/or is married	Scene 16 Michaela gets picked for the Olympic team					
1. Theme (additional symbol for ending of story)	Scene 17 Afterword					

Study B b) 'Brothers in Arms'

Study C 'The Incident'

Figure 49. Templates of the class-created stories from the 'Snow White' structure.

There were no marriage endings in the students' stories. Even though the sample story I read to the students ended with a marriage and the students were aware that most fairy tales end up with "they lived happily ever after", at their age marriage did not interest them. When students were creating their stories, they did it from the stand-point of where they were at in their lives. In my previous research, I confronted the same phenomenon (Charles, 2009). On the unconscious level, children relate only to what addresses their inner conflicts and disregard what they are not ready for (Bettelheim, 1989). However, the girls in Study Ba) who were on the cusp of adolescence mentioned marriage as something they desired for themselves in the future.

Recasting characters' archetypal roles in the *Snow White* story. There are five character roles in the *Snow White* story: hero/ine, villain, accomplice, magical helpers and, what I called the 'prize-giver'. In the story, it is the villain who moves the story along, not the hero/ine. As portrayed by the students, some of their *villains* evoked sympathy from the reader. The villain *Brooks* in Study A is bullied by her classmates because of her appearance and the villain *Ana* in Study B a) feels like an outsider, both in school and at home. The students show they are able to see that the characters are not 'black or white', and show their ability to understand that there may be underlying causes of the *villain's* evil.

The *hero/ines* in the stories are portrayed as good, innocent, and unaware of the intrigue around them but in contrast to the *Snow White* character, some of them do not stay passive: they exhibit proactive behavior. For example, the heroine *Amber* in Study A takes charge and follows the villain into the woods (another realm) to find out more about her. The heroine *Sydney* in Study B a) calls her boyfriend and asks for another date in order to patch up their broken relationship. The girl writers construct different interpretations of the archetypal roles in traditional narratives that are personal as well as socially shaped. Therefore, popular traditional

tales should be studied in the curriculum as an object of social knowledge and critical analysis (Ajayi, 2011).

The role of the *accomplice* allowed for characterization that varied from simple to complex. In Study A, the accomplice *Ivy* is innocent and unaware that her action may harm her friend. The *accomplices* in Studies B a) and B b) are more complex characters, as they have to make choices. The accomplice *Steven* is torn between his feelings for the girl he likes and a loyalty towards his best friend. To complicate things even further, the *accomplice* harbours his own feelings of jealousy towards his friend. The Wizard in Study C has to make a moral choice: to do what he was paid for or to do what is right and stay loyal to the Queen.

The role of the *magical helpers* was cast by the students in various ways: The birds and the unicorns had magical powers, while the Knights were ordinary human beings who did not possess any magical powers at all. The students' portrayals of the *magical helpers* stayed true to the archetypal role by providing the *calm in the storm*, a temporary sanctuary for the hero/ine.

As noted before, the *prize-giver* role is in Propp's terminology the *prince* or *princess*, that symbolizes the attainment of a higher social standing at the end of the hero/ine's journey. The role's function is to act as an equalizer and to restore balance in the story. The students in Study A cast the teacher, Ms. Penelope, into the role and in Study C, a Coach. Both characters are similar. They provide an answer to the villain's question that gets the story moving, and they reward the heroine by crowning her the winner of the competition at the end. In Study B b) the Queen cast into the role has a significant power. She does not provide an answer to a question; she announces her decision of choice and that triggers the villain's jealousy.

In comics, male writers often position females in higher standing, as priceless, fragile characters that are worthy to fight for and that need to be protected from the harm by the main

character (Zpalanzani, 2011). The Queen's role seems to fit this pattern, as the story was created by the boys. However, in the story the Queen is also instrumental in empowering the hero by sending a Wizard to cure him and provide the hero with a sword. In Study B a) the school principal cast into the role restores a balance during crucial events, and her decision at the end provides the story with a closure.

Narrative playground - the class-created story. During the process of building the class story, the children, in fact, created a playground for themselves. They brought into their stories, settings and ideas that interested them, which enabled them later to explore those ideas in depth in their characters' perspective writing. For example, in Study B, two very different narrative playgrounds were constructed from the same scaffolding structure and the questions I posed that showed gender difference in preferences and interests. The High School setting in Study B a) became a playground for the girls to explore their feelings in relationships and the contemporary problem of cyberbullying (which seemed to be very much on their mind); and the medieval playground setting created in Study B b) allowed the boys to explore power play and related actions.

Guided by the templates of their class-created stories, the students were able to step away from knowing where the story was going and reconstruct it from each of the character's point of view. The play allowed the students to improvise and reflect (Conquergood, 1989).

Section 2 - Perspective Taking

The playground of the stories became what Winnicott (1971) calls the *intermediate space* where symbolic relation takes place. The students made meaning for themselves by referencing the world they live in (or the world they have learned about, as was the case in their Medieval story), popular culture and their personal lives in their individual stories. Similar findings

showed in my previous study with fairy tales (Charles, 2009). In the present project, the perspective taking enabled the students the freedom to invent unique characters of their own and to express their personal vision of those characters both in texts and images. The students seemed to really enjoy this type of writing, as conveyed in their comments during the interviews:

Chelsea:

I liked how we got to create our own characters... like usually the teachers give us the character and then we have to like finish up the part of the story that we didn't really understand or if there's an assignment on it... [Here,] we got to create our own and make the plot.

Another student, Izabela, commented:

It's like you can do whatever you want. It's not something that they tell you to do it. Like it was like you get your own point of view. And it really inspired me and when I was thinking about it I just thought I wanted to do it again just by myself. Like write a point-of-view of each character.

In the *playground* of their stories, the students explored possible scenarios of real life under the mask of a fictional character, see where it would lead to, and rehearse those situations in the safety of the story. As one student in Study B a) said, "When you're doing it from the character's perspective you kind of just put yourself in the scene and you're doing these things and you're seeing it like from her eyes..." In psychological terms, by identifying with the protagonists of their stories, the students withdrew from their immediate reality, and made their *planning processor* (Oatley, 1999) available to the goals and actions of a protagonist from whose point of view they were writing.

The perspective taking also became a vehicle for students' personal feelings and concerns that they could examine under the guise of the character's *mask*. In sum, telling a story through characters' points of view not only allowed the students to identify with their protagonists, but it also provided them with a space to express how they felt about the world and themselves.

There was no time limit imposed on students' writing during the sessions. The students were provided with plenty of time to cognitively process how their characters felt both in terms of physical pain (such as injury) and social pain (such as rejection, jealousy and similar difficult circumstances). The time needed for processing is of a critical importance, as emotional reactions to the social pain of others unfold slower in the brain (Immordino-Yang, McColl, H. Damasio, Damasio, & Raichle, 2009). Yet, the results show a difference in boys and girls empathizing with their protagonists. In boys' narratives, only the physical pain of the characters is referenced but not their psychological suffering.

Writing style. As the students were free to express themselves any way they wanted, the effect of social media was very visible in their writing. The students' writing often felt like a speech in a casual conversation. One student said, "I enjoyed the writing...because you get to just go free with it." In all three studies, the students writing on computers, as well as the students writing by hand in paper notebooks, used stylistic features that evolved within e-mail writing and texting, such as word abbreviations and emojis. Many emotions in students' stories were expressed through onomatopoeic sounds, as well in font sizing. Even without the addition of sound, the students' texts felt very auditory and animated. Girls, in particular, used stylistic features such as multiple exclamation marks, intensifiers, for example, "noooo" and "soooo" and trailing dots. Boys, on the other hand, showed consistent use of humour and used profane words in their narrative style.

Findings. Some of the most notable observations that emerged from the three studies were:

- a) Students did not collaborate in their writing when using computers, while students writing a traditional way with pencils and paper notebooks did.
- b) The students who wrote on computers were more reflective about their thoughts. They also talked to and confided in the audience more often.
- c) Boys and girls had distinctive narrative styles even when using the same story content and structure.
- d) The students did not use the digital technology as a *tool* to enhance their own creativity but they used it as a *substitute*.

Section 3 - Writing on Computers

In the studies, the students did not edit or revise their texts. Once their sentences were written, they were considered immutable. The students did not use *Spell Check*, respond to posted comments on their files, or make any changes. They did not discuss their writing with each other or look into the digital files at what the other students did. There was a disconnect between the students' texts and their actual behavior: On the one hand, the students showed the power of digital technology in their stories (cyberbullying, snapchat, texting...); on the other hand, they did not utilize the power of digital technology to their advantage in their work. Collaboration in writing among the students through digital means (though easily available) did not seem to exist. The students played in the narrative playground of their class-created stories, but they *played alone*.

In the Luce-Kapler study (2007) with sixth-grade students producing e-literature using *wiki* digital technology, the students were encouraged to look at stories written by their classmates and to make links where they might see connections. The students did not grasp that

making connections to the stories of their classmates would extend the possibilities and interpretation of their texts. According to the researchers, most students regarded each story as their own discrete creation. After one student became upset that his spelling was corrected by a classmate, the researchers suggested that this aspect of the process would need time and specific work with group skills.

In the article, *The Effect of Computers on Student Writing: A Meta-Analysis of Studies from 1992 to 2002* (Goldberg, A., Russell, M. & Cook, A., 2003), the authors found that students writing with computers produced longer texts and that students generally worked collaboratively. However, in this study, it was observed that students tended towards solo efforts. Ethan Ris, a Ph.D. from the Graduate School of Education at Stanford University, wrote in a 2013 article that, "...technology threatens to isolate us from each other in the classroom... Schools that embrace technology mitigate the isolation in important ways, but many communal experiences are being lost" (<https://www.mercurynews.com/2013/11/21/technology-devices-isolate-us-even-in-schools/>). Ris argues that schools seem to be reinforcing what sociologist Robert Putnam termed "bowling alone", that symbolically identifies social changes in behavior and our increasing disconnection from one another. Cris Rowan, a pediatric occupational therapist, biologist and author, states that, "Technology isolates children from not only the attentions of parent and teacher, but also from potential cooperative learning with other students" (<http://movingtolearn.ca/2014/ten-reasons-to-not-use-technology-in-schools-for-children-under-the-age-of-12-years>).

The assertions in these articles support the findings of my study:

1) The students did not use digital technology to their advantage by improving their texts and collaborating.

2) The perspective writing task worked well in all three studies regardless of whether the students used digital technology or not.

In sum, writing on a computer did not seem to benefit the students in any particular way. However, when I looked closely at the students' writing and coded them for the number of reflections and emotions, my position on the use of computers for writing changed. I was in for a surprise, as the results were totally unexpected. Curiously, the isolation the students may have felt while writing on computer may have contributed to an increase in the number of reflections in students' perspective writing, as will be shown in the following tables.

Comparing results from studies with use of digital technology and study without its use. In the three studies, 55 stories were generated by 44 participants (one student in each group of four wrote two stories). 20 students (16 girls and 4 boys) worked on their stories using *ACER* computer notebooks; and 24 students (13 girls and 9 boys) worked the traditional way, writing with pencils in paper notebooks. Two students working the traditional way in Study C had incomplete texts, so their work was not included in the calculation of all (including previous coded) final results. Therefore, the tables show the calculation from only 22 students' work from Study C. The participants in Study A and Study B were 10 to 12 years old, with the median age being 11 years. Participants in Study C were 10 years old. The method used for coding the emotions and reflections was described in the analytical framework in Chapter 2.

Table 6

Number of Emotions and Reflections in Characters' Stories - Average Students' Count

Average Number	With Technology 20 students	Without Technology 22 students
Story Length	928 words	361 words
Emotions (total)	11.3	4.54
Empathy (only)	2.9	1.2
Reflections (total)	21.1	7.31

The results show that students wrote longer texts and their texts contained more than double the number of reflections and emotions when they used computers for writing than when they wrote by hand in paper notebooks. The students also talked and confided in their reader audience more often. The effect of digital technology was an increase of 2.57 times in word count; 2.48 in total emotions; 2.41 in empathy; and 2.88 in total reflections. This is a big increase.

In this study, I investigated whether digital technology could be helpful in addressing children's documented lack of interest in others (Konrath et al., 2011) that the researchers ascribe in part to the rise in the use of information and communications technologies. I was hoping that constructing multiple perspectives by using technology in hyperstories could allow students to understand how different characters view the same situations and how those characters might feel; that the identification with the characters would increase the students' emotional and empathetic feelings towards others. The results of the studies show that not only did the perspective writing open the students' eyes to the characters' predicaments and feelings but that

writing it on a computer allowed them to process their thoughts more and thus resulted in an increase in the students' emotional reflections.

A meta-analysis of studies on the effect of computers on student writing found that students tend to produce a larger quantity of writing when using computers (Goldberg et al., 2003). The report does not explain why. (The fact that students write longer texts on computers cannot be ascribed to collaboration among students because the same effect occurred in the present project where there was none.) It seems plausible that the nature of a computer screen, while it may feel isolating, provides the students with an illusion of privacy that allows them to be more reflective about their thoughts. Faster typing may be more direct route to pouring one's conscious thoughts onto the screen. As philosopher Friedrich Nietzsche wrote in 1882, "Our writing equipment takes part in the forming of our thoughts" (Carr, 2011, p. 18-19).

Jason Lineberger, a 2014 PBS Digital Innovator and Digital Learning Coordinator for Cleveland County Schools in North Carolina, says that while sometimes online lessons make students feel isolated, "the online environment... gives students the chance to think, to explore" (<http://www.pbs.org/education/blog/isolation-a-pitfall-of-online-learning>). It gives the students time to process. Digital technology, while creating the illusion of privacy, may produce a more immediate stream of reflections.

Of course, there were other elements that may have influenced the final results' count that have to be taken into account:

- 1) Study B a) was emotionally charged for the female students, as the story dealt with relationships.
- 2) More time was spent in digital studies (on creating multimodal parts of the stories).

- 3) Even though all students were fluent in English, the writing may have been easier for students in Study B b) with digital technology, as opposed to the French Immersion students who had not fully mastered English writing yet. (However, that difference showed mainly through spelling mistakes and was irrelevant to the study.)
- 4) There was a one-year age difference in the children’s development. The median students’ age in digital studies was 11.05 years while in non- digital study it was 10 years.
- 5) The boys in Study B were considered ‘good writers’ by their Principal; there were more boys in Study C and those may have still had difficulties writing.
- 6) In Study A and B a) there was a small increase in the emotions’ count by transmediation in digital studies. However, reflections are not affected in that instance.

The effect of digital technology on students’ writing.

Table 7

Comparing Girls’ Stories With and Without Digital Technology

Average Number	Girls With Technology 16 girls	Girls Without Technology 13 girls
Story Length	1,034 words	491 words
Emotions (total)	13	6
Empathy (only)	3.5	1.6
Reflections (total)	20.25	9.9

The effect of digital technology on girls’ stories was an increase of 2.1 in word count; 2.16 in total emotions; 2.18 in empathy; and 2.04 in total reflections. The effect is most pronounced in

the emotions' count, perhaps because the girls tended to use emojis, multiple exclamation marks and they expressed their emotions by modification of the type font.

Table 8

Comparing Boys' Stories With and Without Digital Technology

Average Number	Boys With Technology 4 boys	Boys Without Technology 9 boys
Story Length	502 words	172 words
Emotions (total)	4.5	2.4
Empathy (only)	0.5	0.6
Reflections (total)	10.7	3.3

The effect of digital technology on boys' stories was an increase of 2.9 in word count; 1.87 in total emotions; 0.8 in empathy; and 3.24 in total reflections.

Table 9

Differences in Results of the Digital Technology Effect on Girls' and Boys' Writing

Resulting increase	Girls	Boys
Word count	2.1	2.9
Emotions (total)	2.16	1.87
Empathy (only)	2.18	0.8
Reflections (total)	2.04	3.24

The results indicate that writing on computers more than doubled the word count and the reflections in both girls' and boys' stories. The effect is more pronounced in the boys' results. The effect on the emotions in boys' writing is less than on girls and on empathy it is non-existent.

In Nicolopolou & Richner's study (2007) of preschool children's narratives, the researchers documented how the children's representation of characters in their stories shifted from almost exclusively physical and external portrayals at the age of 3 to portrayals of the characters having consciousness (mental states such as desires, intentions or emotional reactions), at the age of 5. The researchers note that there are a significant gender differences in character representation in the children's stories. In the boys' stories, the representation of characters describing their mental states increased only minimally by 1%. Within the context of the present study, this finding regarding the boys' emotional expressions about the characters in their stories appears as something that is fixed and stable, as it persists to the age of 10 to 12 and that has not been altered or affected by the use of digital technology.

Section 4 - Gender Differences in Writing of Students' Stories. One of the surprising findings during the research was the stark difference in girls' and boys' writing. When I spoke to several teachers and shared with them my observation, they told me they were aware of it. The girls produce much longer and more interesting stories, the teachers said, because girls at that particular age are more mature than boys. However, when I looked at the students' stories more closely and analyzed them, I realized that it was not a case where the boys have to 'catch up' to the girls writing. The boys *wrote* differently than girls and their stories exhibited *different language features*. For instance, the girls used many emotional verbs, emojis, multiple question marks and manipulated font size for emotional effect. Their texts were descriptive and long. In

contrast, boys wrote briefly and straight to the point. They often referenced numbers and time in their stories, and included humour and profane words. It was at this point that I decided to consult additional research literature on gender and narrative writing.

In *Gender Differences in Language Use: An Analysis of 14,000 Text Samples* (Newman, Groom, Handelman & Pennebaker, 2008), the researchers conclude that “men and women used language in reliably and systematically different ways” (p. 230) across various contexts, both in terms of what they say and how they choose to say it. The data for the analysis came from 70 studies, from 22 laboratories that included universities in the United States, New Zealand and England. The studies were conducted over a 22-year period (1980-2002) and included a mix of spoken and written samples from seven different contextual categories: emotion, time management, stream of consciousness, fiction (going back as far as the 17th century), Thematic Apperception Test (TAT)–inkblot, exams, and conversation. Two thirds of the text files for the analysis came from college-age participants. (Young children did not seem to be included within the data.) The data were analyzed by the LIWC (*Linguistic Inquiry and Word Count Program*), a word-based text analysis computerized tool.

The analysis revealed that women used language for discussing people and what they were doing, as well as communicating internal processes to others. Thoughts, feelings, emotions about other people, figured high on the list of words that women used. For the men, language served as a repository for labels for external events, objects, and processes. They used language more for the instrumental purpose of conveying information; for example, describing the number and location of objects. Swear words added emphasis to male language. These findings mirror the results found in the current project with 10-12 year- old children: The girls’ stories contained a high number of emotional words and descriptors of internal feelings; the boys’ stories were

factual, with many references to numbers and time. The boys used humour and offensive language in their narrative style, something that was not found in the stories written by the girls. My study found that these gender differences in language use are *already* in place by middle childhood.

Stylistic features, such as multiple exclamation marks, intensifiers (for example, “noooo” and “soooo” and trailing dots) were found mainly in the girls’ narratives. They gave emotional emphasis to particular parts of a description in their story writing and made their texts feel speech-like, conversational, as if they were talking to a friend. According to Colley, Todd, Bland, Holmes, Khanom, and Pike (2004), multiple exclamation marks are used mainly by women and they signal the sharing of an emotional reaction and anticipate a joint response. In other words, they are *relational*. Those features were not found in the narratives of the boys. Similarly, ‘talking to the imaginary reader’, an aspect found mainly in the narratives of the girls, signifies a rapport, a connection, and can be viewed as relational.

While girls included a lot of detailed descriptions in their stories, the writing of the boys was brief and bare; there were no details provided. Interestingly the same difference shows in boys’ and girls’ visual expressions. In Albers, Frederick and Cowan’s study (2009) of visual texts of third-grade children, the researchers note that girls tended to add more details to their pictures and boys tended to use fewer details in their visual descriptions. As the researchers were analyzing the children’s work through the gender stereotyping *lens*, they interpreted the lack of detail in boys’ drawings to the boys’ inability to relate to girls’ interests and experiences. I suggest that the lack of detail in boys’ visual expressions parallels the lack of detail in their narrative expressions. In the present project, the boys wrote on the topic that interested them but

still the descriptive details were missing. Most of the boys just skimmed over what happened in each scene in a few sentences. Even after some strategies were implemented, the resulting effect on the boys' writing was minimal and it did not change the boys' narrative style.

The difference in narrative style is seen already in children's spontaneous storytelling between the ages of 3 to 5. Nicolopoulou (2011), who studied and analyzed young children's storytelling for decades, found that there are "two highly distinctive gender-related narrative styles that differed sharply in their characteristic modes of representing experience, in their underlying images of social relationships, and in their portrayal of the self" (p. 33). The girls' stories were defined essentially by relationships and were structured so as to maintain or restore social order. The boys' stories were defined by their actions and relished in depictions of violence, destruction and disorder. The same division along gender lines was found in the stories created in Study B of the present project: the girls' story situated in High School centered on relationships, while the boys' medieval story focused on action and violent combat.

In Study C, the strikingly different focus in the stories' events was particularly interesting, as both girls and boys wrote the same scenes from the perspectives of unicorns, a non-gendered species. In the girls' narratives, the focus was relational and expressed a *concern for the other*: a sick unicorn needed to be cured, people needed to be helped, the environment needed to be saved and protected. In contrast, the focus in the boys' stories was egocentric: the unicorn character wanted to fly and teleport, to become a super unicorn, to be a part of a brotherhood. There were two different agendas, two different views and reactions to the events in the story. In the girls' and boys' interpretations, the unicorn story was translated differently, fitted with a different message and thus acquired two different meanings. In the boys' stories the *concern for the other* did not exist.

Two different interpretations of the same event but portrayed in illustration is also discussed by Carol Gilligan (1982) in her book *In a Different Voice: Psychological Theory and Women's Development*. Gilligan argues that men and women have *two disparate modes of experience* that affect their values and views of the world. For instance, when men and women created stories in response to illustrations that show people in varying degrees of physical proximity and distance, they tended to respond differently: As Gilligan concluded, “each sex perceives a danger which the other does not see - men in connection, women in separation” (p. 42). Two different perceptions stand in opposition of each other. These differences seem to be embedded from early childhood.

For instance, Nicolopoulou (2011) writes that what struck her the most in preschool boys' storytelling was “the general *absence* of stable social relationships in the boys' stories and their frequent tenuousness when such relationships were in fact mentioned” (p. 35). This gender-related difference can be also seen in children's games: Boys, who typically play games with rules, winning is what matters. For girls playing games, continuing a relationship with each other (e.g. after quarrels break out) is more important than winning (Gilligan, 1982). Two different perceptions, which stand in opposition to each other and that appear to exist from early age, persist throughout the human lifespan.

The following table shows the gender differences in story lengths and in the number of emotions and reflections contained in the girls' and boys' stories.

Table 10

Number of Emotions and Reflections in Characters' Stories - Girls versus Boys

Average Number	Girls 29 students	Boys 13 students
Story Length	790.7 words	273.6 words
Emotions (total)	9.79	3.07
Empathy (only)	2.65	0.61
Reflections (total)	15.62	5.61

The results show that on average, the girls wrote 2.88 times more words and their stories contained 3.18 times more emotional expressions, 4.34 times more empathy, and 2.78 times more reflections. That is, the girls produced more than double the writing and reflections than the boys and expressed four times more of their protagonists' emotions.

I recall talking to some of the boys during a session in Study C and trying to explain to them that they should add more details to their stories. The boys looked at me puzzled, not comprehending what was wanted from them. Perhaps I was asking them for something they were not able to do. As I can see now, the boys were writing from a different viewpoint, a different mode of experience, with different imagining that made sense to them but that I did not understand. They were constructing their stories in *different ways of worldmaking* (Goodman, 1978).

Table 11

Comparison of Average Counts in Girls' and Boys' Stories Without the Use of Digital Technology

Average Number	Girls Without Technology 13 students	Boys Without Technology 9 students
Story Length	491 words	172 words
Emotions (total)	6	2.4
Empathy (only)	1.6	0.6
Reflections (total)	9.9	3.3

Writing the traditional way, with pencils in notebooks, the girls wrote 2.85 times more words and their stories contained 2.5 times more emotional expressions, 2.66 times more empathy and 3 times more reflections.

Table 12

Comparison of Average Counts in Girls' and Boys' Stories With the Use of Digital Technology

Average Number	Girls With Technology 16 girls	Boys With Technology 4 boys
Story Length	1,034 words	502 words
Emotions (total)	13	4.5
Empathy (only)	3.5	0.5
Reflections (total)	20.25	10.7

The results show that on an average, using digital technology, the girls wrote 2.05 times more words and their stories contained 2.88 times more emotional expressions, 7 times more empathy and 1.89 times more reflections. It appears that writing on computers closes the gap in the word count and reflections a bit between girls and boys, while it increases the difference in girls' emotional expressions because they manipulate the font size and use emojis in this 'free style' of writing.

Stepping into the other gender's proverbial shoes. In the project, only one boy in Study C volunteered to write from a girl's perspective (and it should be noted that the girl/character was a *villain*). No other boys were interested in taking up the female roles. Girls, on the other hand, had no hesitation in assuming boys' roles and told me that they enjoyed it. The same scenario was encountered in my previous research with fairy tales: The girls would take on the role of a prince but boys had no interest in stepping into the role of a female protagonist in the story. Albers, Frederick and Cowan (2009) made a similar finding in their analysis of the visual texts of third-grade children: while girls were comfortable in visually stepping into the shoes of boys, the opposite was true of boys, who had less desire to put themselves into the proverbial shoes of girls. The researchers concluded that while girls were able to relate to boys' interests and activities, the boys could not relate to girls' experiences. Perhaps this interest or disinterest *in others* is rooted in the gender differences discussed earlier: connection and separation – viewing the world from an *individualistic* or a *relational* perspective (Gillian, 1982; Nicolopoulou, 2011).

In the present project, when I asked the girls about what it was like to write from a boy's perspective, the girls told me they enjoyed it and that it was easy. "Boys are simple", one of them

said, “they like sports, video games and music.” While the girls were able to refer to boys’ interests and adopt some of the boys’ language (e.g. “dudes”), their writing style did not reflect the boys’ writing. In Study B a), *Steven*’s stories that were written by girls contained 2270 and 1868 words, the highest word count in the study. It was somewhat of a testament to the girls’ engagement and their interest in exploring the boy’s character mindset. In contrast, the same *Steven*’s story, written by a boy in a voice of his own gender, contained only 448 words (which was the lowest word count in the study).

Ironically, while the girls enjoyed writing from the boy’s perspective and expressed what the character thought in their stories, they got the boy’s perspective wrong: Their texts were too descriptive and emotional. The girls might have *thought* that is how the boy’s character feels and perceives situations in the story, but in reality, as evidenced in the same *Steven*’s story written by the boy, it was not the case; none of the reflective pondering in the boy’s mind was happening. His story was brief and factual. When the girls stepped inside of the boy’s character situation, they wrote it from the perception of their own gender.

A similar finding was reported by Albers, Frederick and Cowan (2009) in their study of visual texts of third grade children: When portraying the opposite gender, boys drew girls as individuals, separate figures in an isolated setting, while girls drew boys in a social setting, relating to others. The children’s own gendered schemes for depicting the world were carried over and evidenced in how and what they drew.

Story length and perception. As seen on the tables 10, 11 and 12, the longer texts contain more reflections. However, it seems to be a ‘chicken and an egg’ situation – what comes first? Longer texts result in a higher number of reflections but at the same time, the students’ reflection on events and characters in the story fuels the length of the written narrative. Often,

the students' reflections in the stories are triggered by their characters' emotional state. The students respond *in character* to the events in the story as they perceive them. As Damasio (2003) tells us, perception enables us to construct mental images, or neural maps, first emotions and then feelings. Only after that can we reflect on those emotions and then formulate our feelings through language or visual expression. As Damasio puts it, feelings are the thoughts of the body being in a certain way.

In sum, if the students' perception of the stimulus - the class-created story events - does not result in evoking emotions in the students, they will have little to reflect upon and to write about. Thus, the students' texts will consequently be much shorter. *The students' narratives are dependent on the students' perception and their narratives are the response to the stimuli.*

Gillian Einstein, a neuroscientist at the University of Toronto, inadvertently expanded on Damasio (2003) by expressing her view of the body, mind and behavior to writer Kate Allen:

The mind is the body, as far as I'm concerned. The body has a mind... Cognition isn't necessarily something that just happens in the brain... This idea that gender is only social, and doesn't get under the skin is no longer true.... [T]o understand the brain we need to examine not only sex differences like hormones and genetics but also the cultural context of gender, and how social and cultural life experiences are absorbed into our biology. "The world writes on the body," Einstein often says. (Allen, 2017, pp. IN6-IN7)

Perhaps, the finding in the present study of the gender differences in students' writing may be explained in an evolutionary way, as being rooted in primordial times. Then, in general, men were hunters and women were gatherers (Reilly, 1989). The hunters looking for large prey had to scan their surroundings quickly, react and move while the women looking for mushrooms, plants and berries had more time to discern nuances and details. There was no rush - the

mushrooms were not going to run away. In the present project, the boys skimming quickly over the events in the story and the detailed descriptions in the narratives of the girls seem to be mirroring the gender perceptions of our ancestors. The gender differences in the students' writing may be the result of the genetic markers imprinted on humans from primordial times.

Section 5 - Multimodality

When a project offers multiple points of entry, it invites all students into learning and increases students' participation and engagement (Lenters & Winters, 2013; Vasudevan, Schultz & Bateman, 2010; Lotherington & Page, 2017). So, how did multimodal representations shape the students' stories in these three studies? Which modalities did children use to express their characters' emotions? In Study A, conducted with students with learning difficulties, the students' hyperstory contained a lot of acting, sound bites and plenty of original artwork. In Study B, the dominant modality was linguistic but was combined with digital images from the Internet and emojis to express or emphasize feelings. In Study C, where video and sound recordings were not possible, the students included writing with a lot of original drawings (sometimes within their texts).

Acting out the scenes in the story, going physically through the motions, clarified for the students what was happening and helped them to feel the characters' actions and emotions. This was really *stepping into the character's shoes* and stepping into the story. As the students described it, "It was like being there; you get to feel it." This process was especially effective and helpful to the participants in Study A, who had difficulties with writing. A student told me, "I like how we did it in a video instead of just writing it down 'cause I don't like writing it down." Afterwards, these students were able to describe orally what their characters did during the scenes which helped them to write it down later on. This strategy was somewhat reminiscent

of Payley's work (1990) with preschool children where the students invented their own story, decided which character they wanted to be and acted out the story with their peers, while the teacher recorded what happened. In our project, this procedure enabled the students to really understand and feel what their characters were doing which made it easier for them to describe it with written words.

Using *Green Screen* technology and drama while acting their scenes in videos was a high point for the students in Studies A and B. In their interviews, the students expressed a wish to do more. It should be emphasized that this was a *collaborative* activity and even if the students were not the actors in the scene, they worked as a group by setting things up and by providing constructive comments.

Creating images. It seems ironic that while our world is increasingly visual, a majority of students lack the confidence and desire to express themselves with their *own* pictorial representation. There are underlying reasons for that. Parallel to children's oral language progression of their character representation from *actors* to *agents* to *persons* in their storytelling (Nicolopoulou & Richner, 2007), children pass through several stages of drawing during their development (Edwards, 1999; Gardner, 1980).

Around the age of five, children begin to use drawings to tell stories, to portray their feelings and to work out their problems. They do it by exaggerating basic forms in their drawings; for example, making objects very small or big, to express their intended meanings. In the next stage, around age six, children develop a set of symbols to create a landscape. There is a ground at the bottom of the page, sky at the top with circle sun with radiating lines and most children's landscapes contain some version of a house (Edwards, 1999). The drawings are spontaneous, joyful and there is no judgement about whether the drawings look right or wrong.

At the age of nine or ten when children's interest shifts towards realism, the next stage in drawing sets in. The children begin to ask themselves: does the object in the drawing look real? They strive to produce pictures that are realistic looking or they draw things they see in popular media, often copying the style in which those things are represented (Edwards, 1999). If their drawing is not met with approval from their peers, children often become discouraged. At this age, language assumes the principal role for most children as a means of self-expression, as it seems to get things more precise and right (Gardner, 1980). In Study B in particular, most students were competent writers. Some of them could almost *paint* with words to express their feelings. Once the children acquire competence in expressing themselves in written language, their inclination to express themselves through drawing seems to diminish (Gardner, 1980; Edwards, 1999). At this stage, the drawing may no longer be experienced as an activity providing them with relief or pleasure but it may become something of a test.

In Study B when the students were given a choice of drawing by hand or finding images on the Internet, they preferred to choose images from the Internet. The *availability* seemed to cancel their *initiative*. Choosing an image is a short cut: avoiding the messy part and getting the thrill of being creative. In Luce-Kapler's study (2007), the students working in the computer lab seemed most excited when they were finding images on the Internet. Also, in the PoliCultura project in Italian schools, it was noticed that the older students preferred to reuse downloaded visual material from the Internet (Garzotto et al., 2010).

Choosing an image from the Internet provided some students with the illusion that the image was their own and they took credit for it. Although it is a rational process, choosing does not involve the senses the way physical drawing does. In the present study, not everybody accepted the appropriation of the images. For one of the students, choosing an image from the

Internet presented a moral problem: “I don’t like to take things from the Internet”, she said. “I feel like I would be stealing something!”

The students did not use the digital technology as a *tool* to enhance their own creativity but they used it as a *substitute*. *Choosing* is now viewed as *creativity*. Even if the students had visualized the story as they were creating it, the chances to find an image that matches what they saw in their minds’ eyes are slim. The *image* choice was limited because the students were only permitted to search for material from the Internet’s *copyright free* sites. The students chose realistic images that mostly represented the objects and settings of their stories but did not add much meaning or show the emotional states of their characters. The emotions were expressed by the addition of emojis. During the sessions, the students needed to be supervised when they looked for the images on the Internet to stay on track. When the students found an image that they liked, they used it the way it was. The image was not cropped or enhanced digitally in any way. Furthermore, additional time was needed for instruction on how to bring the digital material found on the Internet into the students’ digital files.

The students told me in their interviews that they all had iPads, phones and computers at home and they were using their digital devices for playing video games or texting their friends; *not* for extra work or educational purposes for school. While parents may think their children are working on school assignments at home, according to Rowan (2014), “95% of time children spend on tech devices is for mindless entertainment purposes, not education” Retrieved from <http://movingtolearn.ca/2014/ten-reasons-to-not-use-technology-in-schools-for-children-under-the-age-of-12-years>.

Sometimes schools are being targeted for not trying to bring the students' world on the outside into the school but it appears that it is the children themselves who put up the separating-wall between digital technology and school and they have no desire to mix the two.

While new technologies offer fresh possibilities for creative work, the social setting of each era also affects motivation (Cromptley, 2001). Creativity is always a product of its time (Sawyer, 2006). The fact that digital devices combine many exciting creative features all-in-one while including access to social media may be convenient but at the same time it is problematic: How can one use those digital devices as working tools (e.g. for editing and enhancing images and sound) and retain the concentration when there is a constant awareness that some other more entertaining (and distracting) activity is just one click away? Researchers at California State University, Dominguez Hills found middle-school students who were asked to study for 15 minutes could only go two or three minutes without checking Facebook or sending a text message (Rosen, 2017).

Even when given the freedom to express themselves any way the students wish, there are obstacles in the way of students' producing their original artwork. As seen in the present study, the students chose to draw *only* if they were not yet fully proficient in writing or if it was their personal interest. Because in our culture the educational system is focused on reading, writing and arithmetic, drawing has been virtually neglected. Thus, it comes as no surprise that children participating in the project were reticent to make their *own* drawings. The combination of their developmental stage and of schooling that does not encourage art, explains the students' hesitancy to express themselves by drawing. *Unless* the basic skill of drawing is kept up and encouraged as a *valid* type of communication in schools, this situation is not going to change.

Even though drawing spontaneity declines as children mature and their literary abilities develop, the skills of drawing expressions could be maintained through continuous practice. In other countries where drawing was a part of a regular curriculum, for example in former Soviet Russia or Czechoslovakia (where I grew up), nearly every child managed to retain some minimal competence in drawing. Instead of a decline, there was the attainment of basic literacy in graphic expression (Gardner, 1989). The school system needs to acknowledge that students' visual communication is equally as valid as writing. Art is a language system and messages conveyed visually are as important as those expressed through written and oral language (Albers, Frederick & Cowan, 2009).

Sound. Many students included sounds in their stories by writing onomatopoeic words. For example, "... my reward is drum roll please **THUMP THUMP THUMP THUMP THUMP THUMP**..."; "Ahhhhhh! SPLASH!"; "Wssshhhhh' I was off in a flash..."; "Ding-Dong!"; "...Crunch crunch crunch". It was intuitive and something the students encounter in comics. Reproducing the sounds physically by voice or with props did not even enter into the students' minds. It was far beyond anything they would do in a classroom. Yet, when it was suggested they could look for sound effects on the Internet, the students responded with enthusiasm. However, they were faced with the same obstacles as when they were looking on the Internet for images: the choice was limited to *copyright-free* sites, the students needed to be instructed how to bring the sound effects into their files, and they did not know how to edit them.

Sound as a language of communication seems to be on the periphery of classroom instruction. The effect of tonality and rhythm on our mind may be understood intuitively but it would be beneficial to students to learn some of the aural grammar in order to critically understand how sound communicates meaning and why.

Conclusion. If the teachers were to support the students in expressing themselves *effectively* in multimodal communication, multimodal *grammars* would have to be systematically taught, first to teachers and then to students before the students could put them into practice. Miller and McVee (2012) outlined six principles for multimodal composing in classrooms that need to be enacted simultaneously:

- 1) developing a New Literacies stance;
- 2) initiating a social space for mediation of collaborative composing;
- 3) co-constructing a sense of felt purpose for students' multimodal composing;
- 4) drawing on and encouraging students to draw on their identities and lifeworlds;
- 5) making design elements explicit as meaning-making tools;
- 6) supporting embodied learning through students' transmediating symbolically with modes.

That in turn means a huge amount of time would need to be allocated for it by the educational system first (Hill, 2010; Thomas, 2012).

Creativity. As in eras gone by, a new technology enables something to be gained while at the same time, something gets lost. In the present project, digital technology made it possible to preserve the students acting their scenes as video clips and allowed us to insert those clips, images and sounds into the digital format of the story. As a result, the reader/viewer is provided with a different and enriched experience.

However, working with digital technology had its price: it took a toll on students' motivation and desire to express themselves by doing their original work. Truly creative moments during the project happened when there was no digital technology involved; they were a result of personal interaction with other students when the students were feeding and receiving inspiration from each other. The students' creativity was a result of spontaneous, collaborative

play. In Study A, the creativity was seen in the students' acting out the scenes and in collaborating in the artwork. Similarly, in Study B, the students' creativity showed in acting and their spontaneous singing and dancing number. Creating the *unicorn world* in Study C was also a result of the students' being inspired by each other that resulted in their collaboration.

Chapter 6

Implications for Practice

Perspective writing is easy to implement into practice and it works well regardless of whether the students use digital technologies or not. After collectively creating the baseline of their story, most students were able to write all of their scenes from the characters' points of view in just a few sessions, thus the written part of the project could be accomplished easily within a week during their daily language period.

Using the baseline of the class-created story was effective and allowed the students to bring into their story topics that were of interest (see Charles, 2009, pp. 161-169). However, even using existing fairy tales as a baseline story for creating multiple storylines combined with multimodal storytelling will likely produce results and engage the students. In such a case, it is of benefit, *not to show* the stories' illustrations so that the students can visualize the characters and setting for themselves. So, what can be inferred from this project to inform English Arts programming in elementary grades? There are several points I want to address:

Teacher's role is pivotal. When embarking on digital and multimodal work in the classroom, the teacher' stance is the most important (e.g. Whitehead, 2005; Di Blas et al., 2010; Hill, 2010). It comprises a) understanding that literacy is shaped by multiple sign systems; b) providing students with the opportunity to use those sign systems; and c) having some understanding of the signs' basic grammar and their effectiveness in order to support the students in their use of modal expressions. Furthermore, teachers should be able to demonstrate *how* to use digital technology as a *tool* for extending students' creativity and in their multimodal expressions.

Planning is important. Here, I specifically refer to planning by the teacher. Teachers need to familiarize themselves with the initial tale they want to use, understand what the tale is about and the functions of the story's characters. Between the sessions, my study suggests that the teacher reviews and evaluates what was done in the previous session in order to plan what needs to be done next.

Several researchers noted, that when left on their own, children do not devote much time to planning because they want to just go ahead and start writing their story. For instance, Cameron and Moshenko (1996) found that the planning time of 53 sixth graders was on the average about two minutes. MacArthur and Graham (1987) found that students spent less than one minute planning, even when they were prompted to plan before writing and encouraged to take as much time as they needed to do so. As seen in the present study, providing the students with a template of the story that functioned as a storyboard, allowed the students to work independently. During the interview with the students in Study A, one of them said, "It's better planning with pictures cause with words it's kind of confused and with pictures it makes it better". In the Bogard and McMackin study (2012), students' response to planning was, "I write [sic] whatever comes to mind" and, "When I have an idea [sic] I write it down and then soon another idea [sic] pops in my head" (p. 315). As mentioned in the Discussion chapter of the present study, the children's stories were the result of the stimulus of the story initially told them. If this process was interrupted by asking students to plan their story first, it would break the magic cast by the story told and the students' intuitive process of going from one idea to the next.

My method of approaching the writing of stories is the other way around: First, the children write or tell their story (with only the guidance of the 'visual symbol map') and then the

teacher may show them what they accomplished - how they created characters, a setting, a story's problem and its resolution. A similar approach can be taken when introducing some art activities, for example painting or sculpting for pieces of their multimodal work. The students acquaint themselves with the medium first, play with it, feel it, and explore it. Giving instructions ahead of time will compromise and restrain their natural curiosity, an ability to play with possibilities, to experiment with what the media can do.

During the sessions, the key seems to be to work with just one group at a time, catch the students' spark of creativity, support it and let them play with it. Ironically, the help that the children born into the digital world may need the most, is help with using digital technology as a *tool*. Because the project combines both collective storytelling and individual storylines from the characters' points of view, the final product of the project could be compared to a performance by an orchestra: The students, authors of their individual stories are the players that only appear during certain scenes of the whole piece, and the teacher is the orchestra conductor, making sure the performance comes together seamlessly and effectively. The students may provide their ideas, multimodal work, and the stories' plots, but ultimately it is the teacher who is the manager, director and producer of the project who has to coordinate and ensure the class story's completion.

Using digital technology adds a lot of time to work in the classroom. For example, in study A and B, the process of creating files in Google Drive and connecting digitally within their groups took students the entire session to complete under the guidance of their teacher, who was a digital specialist. Finding images on the Internet is time-consuming and students need to be supervised to stay on track when using the Internet. When adding images and sounds from the Internet, each group needs individual support and guidance in order to make progress.

Furthermore, if students were to digitally assemble their stories together, by the teacher's estimate, it would take an additional 2 to 3 weeks. Extended time may be needed for the completion of digital and multimodal projects, thus flexibility in the curriculum is needed (Lotherington & Page, 2017; Ohler, 2008).

Digital technology has to be combined with personal interaction among students; it needs to be balanced with co-operative learning. If students write their stories on computers, time should be provided for students to read their work aloud to others in their group, so the facts in the students' storylines align within their groups, even though they are told from other characters' perspectives. It is a *collaborative authorship* and even if each member of their group has a different role, it is *team* work. Learning to work as a team is important for students' future. Writing on the computer seems to produce more text and reflections but more text does not ensure better quality. Students need to be taught how to edit in order to make their texts more concise. Here, some mini lessons interspersed throughout the project's process would be useful. More research on the quality of digital writing versus the quality of writing the traditional way needs to be conducted.

Digital technology should be used as a support to a project. With regards to multimodal storytelling, bringing in digital technology at the start of the project will inhibit and compromise children's innate creativity to express themselves through their own drawn images or the creation of their own soundscapes. Digital technology should be *assistive, not a replacement* for natural spontaneous abilities. I recommend sourcing the Internet for images only in connection with acting and *green screen* (if the teacher decides to make the acting videos). At that point, the children could find the background for the scene's setting so it will appear more *real* for the viewers. That way, the children's imagination will be undisturbed and freely displayed during

their story creation. Further research should explore how other children will read and navigate these multi-layered narratives when they are digitally presented on the screen, and how they will comprehend them.

Acknowledging gender differences in language use. The gender effect on children's writing was not a subject of this project's investigation. The findings of differences in boys' and girls' writing emerged incidentally during the project but discussing them any further is beyond the scope of this study. Regardless of the reasons for the phenomenon, this study found that boys express themselves differently than girls. If teachers were made aware that there are gender differences in how children tell their stories and how they use language in a different way, it might shed light on their students' performance in class and help educators to adjust their instructions accordingly. Future research investigating the comparative narrative writing styles of boys and girls might be worthwhile.

Considering the hesitancy of boys stepping into the *proverbial shoes* of the girls to write from their points of view, students may be asked to take up the *opposite* gender roles in the story and explore what it may feel like to be in those characters' circumstances. What will their narratives reveal? Interesting discussion in the classroom may ensue. Future research should investigate narrative writing of boys taking up female characters' roles.

Conclusion. The aim of the research was to explore how elementary students would create 21st-century narratives with multilinear storylines and the use of multimodal expressions through digital means. The results showed the project's activities empowered the students and engaged them. Perspective-taking in their stories allowed students to examine the lives of others, emotionally process the story and empathize with their story characters' predicaments, as well as understand that characters, while being in the same situation, may view it in a different way. At

the same time, the students' stories allowed us a glimpse into how the children perceive their reality and the world they live in.

There lies an exciting array of possibilities as to how to communicate stories and how those stories could be experienced. But the road ahead is also strewn with danger of what can be lost along the way. Digital technology can extend our human abilities or it can atrophy them. It is the responsibility of educators to model for their students how digital technology should be used as a tool for our betterment. However, the productive implementation of digital technology does require greater professional development for teachers and a critical awareness of technological applications in the literacy classroom.

References

- Aarne, A. (1973). *The types of the folktale: A classification and bibliography* (2nd ed.). Helsinki, FIN: Suomalainen Tiedekatemia Academia Scientarum Fennica.
- Aarseth, E. J. (1997). *Cybertext: Perspectives on ergodic literature*. Baltimore, MD: Johns Hopkins University Press.
- Ajayi, L. (2011). Video “reading” and multimodality: A study of ESL/literacy pupils’ interpretation of Cinderella from their socio-historical perspective. *Urban Review*, 44, 60-89. doi:10.1007/s11256-011-0175-0.
- Albers, P. Frederick, T. & Cowan, K. (2009). Features of gender: An analysis of the visual texts of third grade children. *Journal of Early Childhood Literacy*, 9(2), 232-260.
doi:10.1177/1468798409105588
- Allen, K. (2017, June 3). Science, sex and sexism. *Toronto Star*. Retrieved from <https://www.thestar.com/news/gta/2017/06/03/toronto-neuroscientist-tackling-science-sex-and-sexism-in-womens-health.html>
- Alexander, B. (2011). *The new digital storytelling: Creating narratives with new media*. Santa Barbara, CA: Praeger.
- Avi. (2010). *Nothing but the Truth*. New York, NY: Scholastic.
- Ayman-Nolley, S. (1992). Vygotsky’s perspective on development of imagination and creativity. *Creativity Research Journal*, 5(1), 77-85. doi:10.1080/10400419209534424
- Bailey, N. M. (2009). "It makes it more real": Teaching new literacies in a secondary English classroom. *English Education*, 41(3), 207-234. Retrieved from <http://www.jstor.org/stable/40173321>

- Barthes, R. (1979). From work to text. In J. V. Harari (Ed.), *Textual strategies: Perspectives in post-structuralist criticism* (pp. 73-81). Ithaca, NY: Cornell University Press.
- Baumann, J. F., & Bergeron, B. S. (1993). Story map instruction using children's literature: Effects on first graders' comprehension of central narrative elements. *Journal of Reading Behaviour, 25*, 407-437. Retrieved from <http://jlr.sagepub.com/content/25/4/407.refs>
- Bettelheim, B. (1989). *The uses of enchantment: The meaning and importance of fairy tales*. New York, NY: Vintage Books.
- Bogard, J. M. & McMackin, M. C. (2012). Combining traditional and new literacies in a 21st-century writing workshop. *The Reading Teacher, 65*(5), 313-323.
doi:10.1002/TRTR.01048
- Bolter, J. D. (2001). *Writing space: Computers, hypertext and the remediation of print*. Mahwah, NJ: Lawrence Erlbaum.
- Bolter, J. D. & Grusin, R. (2002). *Remediation: Understanding new media*. Cambridge, MA: MIT Press.
- Bremond, C. (1964). Le message narratif. *Communications, 4*(4), 4-32. Retrieved from http://www.persee.fr/web/revues/home/prescript/article/comm_0588-8018_1964_num_4_1_1025
- Bronowski, J. (1978). *The origins of knowledge and imagination*. New Haven, CT: Yale University Press, 1978.
- Brooks, P. (1984). *Reading for the plot: Design and intention in narrative*. Cambridge, MA: Harvard University Press.
- Browne, A. (1998). *Voices in the park*. New York, NY: DK Publishing.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.

- Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Buckner, R. L., & Carroll, D. C. (2007). Self-projection and the brain. *Trends in Cognitive Sciences*, 11(2), 49-57. doi:10.1016/j.tics.2006.11.004 Retrieved from http://journals2.scholarsportal.info.ezproxy.library.yorku.ca/pdf/13646613/v11i0002/49_satb.xml
- Cameron, C.A., & Moshenko, B. (1996). Elicitation of knowledge transformational reports while children write narratives. *Canadian Journal of Behavioural Science*, 28(4), 271–280. doi:10.1037/0008-400X.28.4.271
- Charles, V. M. (2006). *Making traditional tales relevant for contemporary children* (Master thesis). Retrieved from <https://www.library.yorku.ca/find/Search/Results?type=AllFields&lookfor=making+traditional+tales+relevant+for+contemporary+children&mylang=en>
- Charles, V. M. (2007; 2008). *Easy-to-read spooky tales*. Toronto, ON: Tundra Books.
- Charles, V. M. (2009). *Fairy tales in the classroom*. Markham, ON: Fitzhenry & Whiteside.
- Charles, V. M. (2010). Bianca and the six robbers. In, *It's not about the apple!*. Toronto, ON: Tundra Books.
- Carr, N. (2011). *Shallows*. New York, NY: W. W. Norton & Company.
- Clancy, S. & Lowrie, T. (2002). *Researching multimodal texts: Applying a dynamic model*. Paper presented at the Annual Meeting of the Australian Association for Research in Education, Brisbane. Retrieved from <http://www.aare.edu.au.ezproxy.library.yorku.ca/02pap/cla02237.htm>.

- Clothier, P. (2003). The hype on hyperstories. *American Society for Training & Development (ASTD)* Retrieved from <http://worldtraining.net/hyperstories.htm>
- Clyde, J. A. (2003). Stepping inside the story world: The subtext strategy- a tool for connecting and comprehending. *The Reading Teacher*, 57(2), 150-160. Retrieved from <http://www.jstor.org/stable/20205334>
- Coates, E. & Coates, A. (2011). The subjects and meanings of young children's drawings. In, D. Faulkner & E. Coates (Eds.), *Exploring children's creative narratives*. New York, NY: Routledge.
- College Entrance Examination Board. (2008). Table 2: Mean SAT scores of college-bound seniors, 1972-2008. Retrieved from <http://professionals.collegeboard.com/profdownload/cbs-08-Page-2-Table-2.pdf>
- Colley, A., Todd, Z., Bland, M., Holmes, M., Khanom, M., & Pike, H. (2004). Style and content in emails and letters to male and female friends. *Journal of Language and Social Psychology*, 23, 369–378.
- Conquergood, D. (1989). Poetics, play, process, and power: The performative turn in anthropology. *Text and Performance Quarterly*, 1, 82–95. Retrieved from <http://www.csun.edu/~vcspc00g/603/PoeticsPlayProcessPower-DC.pdf>
- Crafton, L. K., & Brennan, M., & Silvers, P. (2007). Critical inquiry and multiliteracies in a first-grade classroom. *Language Arts*, 84(6), 510-518. Retrieved from http://www.literacyinlearningexchange.org/sites/default/files/critical_inquiry_and_multiliteracies_in_a_first-grade_classroom.pdf
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage

- Cropley, A. J. (2001). *Creativity in education & learning*. Abingdon, OX: Routledge Falmer.
- Cross, B. (2005). Split frame scenario thinking and multiple scenario awareness: How boys' game expertise reshapes possible structures in a digital world. *Discourse Studies in the Cultural Politics of Education*, 26(3), 335-353.
Retrieved from <http://www.editlib.org/p/103355/>
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. London, UK: Sage Publications
- Csikszentihalyi, M. (1975). Play and intrinsic rewards. *Humanistic Psychology*, 15 (3), 41-63.
doi:10.1177/002216787501500306
- Daiute, C. (1989). Play as thought: Thinking strategies of young writers. *Harvard Educational Review* 59(1), 1-23. doi:10.17763/haer.59.1.t232r3845h4505q5
- Damasio, A. (2003). *Looking for Spinoza: Joy, sorrow and the feeling brain*. Orlando: A Harvest Book Harcourt.
- De Castell, S., & Jenson, J. (2003). Serious play: Curriculum for a post-talk era. *Journal of the Canadian Association for Curriculum Studies*, 1(1), 47-52.
- Denzin, N. K. & Lincoln, Y. S. (2005). *The sage handbook of qualitative research* 3rd ed. Thousand Oaks, CA: Sage.
- Di Blas, N., Garzotto, F., Paolini, P. & Sabiescu, A. (2009). Digital storytelling as a whole-class learning activity: Lessons from a three-years project. In I. A. Iurgel, N. Zagalo, and P. Petta (Eds.). ICIDS 2009, LNCS 5915. (pp. 14-25). Berlin Heidelberg: Springer- Verlag.
doi:10.1007/978-3-642-10643-9_5
- Dresang, E. T. (1999). *Radical change: Books for youth in a digital age*. New York, NY: H. W. Wilson Company.

- Doležel, L. (1998). *Heterocosmica: Fiction and possible worlds*. Baltimore, MD: John Hopkins University Press.
- Edwards, B. (1999). *The new drawing on the right side of the brain* 3rd ed. New York, NY: Penguin Putnam.
- Elleström, L. (2010). *Media borders, multimodality and intermediality*. Basingstoke, GBR: Palgrave Macmillan.
- Emery, D. W. & Milhalevich, C. (1992). Directed discussion of character perspectives. *Reading Research and Instruction*, 31(4), 51-59. doi:10.1080/19388079209558095
- Emery, D. W. (1996). Helping readers comprehend stories from characters' perspectives. *The Reading Teacher*, 49(7), 534-541.
- Retrieved from <http://tcpantazes.wmwikis.net/file/view/article.pdf>
- Favat, A. (1977). *Child and tale: The origins of interest*. Urbana: National Council of Teachers of English.
- Federman, M. (2005). Why Johnny and Janey can't read, and why Mr. and Mrs. Smith can't teach: The challenge of multimodal media literacies in a tumultuous time. Retrieved from <http://individual.utoronto.ca/markfederman/WhyJohnnyandJaneyCantRead.pdf>
- Feldman, C., Bruner, J., Kalmar, D. & Renderer, B. (1993). Plot, plight, and dramatism: Interpretation at three ages. *Human Development* 36, 327-342.
- doi:10.1159/000278220
- Feldman, D. H. (2004). Piaget's stages: The unfinished symphony of cognitive development. *New Ideas in Psychology*, 22(3), 175-231.
- doi: 10.1016/j.newideapsych.2004.11.005

- Felker, K. (2002). Ariadne's thread: Hypertext, writing, and the World Wide Web. *Library Hi Tech*, 20(3), 325-339. doi:10.1108/07378830210444522
- Fitzgerald, J., and Spiegel, D. L. (1983). Enhancing children's reading comprehension through instruction in narrative structure. *Journal of Literacy Research* 15, 1-18. doi:10.1080/10862968309547480
- Flavell, J. H., Miller, P. H. & Miller, S. A. (2002). *Cognitive development* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Flynn, J. R. (2007). *What is intelligence? Beyond the Flynn effect*. New York: Cambridge University Press.
- FPMV: "PFUDOR" (2013). [Pink fluffy unicorns dancing on rainbows song](https://www.youtube.com/watch?v=qRC4Vk6kisY). Retrieved from <https://www.youtube.com/watch?v=qRC4Vk6kisY>
- Frasca, G. (1999). Ludology meets narratology: Similitude and differences between (video) games and narrative. Retrieved from <http://www.ludology.org/articles/ludology.htm>
- Gardner, H. (1980). *Artful scribbles*. New York, NY: Basic Books, Inc., Publishers.
- Gardner, H. (1982). *Art, mind & brain*. New York, NY: Basic Books, Inc., Publishers.
- Gardner, H. (2008). *5 Minds for the Future*. Boston, MA: Harvard Business Press.
- Gardner, H. & Davis, K. (2013). *The app generation: How today's youth navigate identity, intimacy, and imagination in a digital world*. New Haven, CT: Yale University Press.
- Garzotto, F., Herrero, E. & Salgueiro, F. (2010). One tool-many paradigm: Creativity and regularity in youngsters' hyperstories. In R. Aylett et al. (Eds.), *ICIDS, LNCS 6432* (pp. 44-49). Berlin Heidelberg: Springer-Verlag. doi:10.1007/978-3-642-16638-9_8
- Gilligan, C. (1982). *In a different voice. Psychological theory and women's development*. Cambridge, MA: Harvard University Press.

- Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.) Boston, MA: Pearson
- Goldberg, A., Russell, M., & Cook, A. (2003). The effect of computers on student writing: A meta- analysis of studies from 1992 to 2002. *Journal of Technology, Learning, and Assessment*, 2(1). Retrieved from <http://www.jtla.org>.
- Goodman, N. (1978). *Ways of worldmaking*. Indianapolis, IN: Hackett.
- Guarino, C. M. & Borden, V. M. H. (2017). Faculty service loads and gender: Are women taking care of the academic family? *Research in Higher Education*, 58(6) 672-694.
- Hagen, U. (1973). *Respect for acting*. Hoboken, NJ: John Wiley & Sons, Inc.
- Haggerty, M. & Mitchell, L. (2010). Exploring curriculum implications of multimodal literacy in a New Zealand early childhood setting. *European Early Childhood Education Research Journal*, 18(3), 327-339. doi:10.1080/1350293X.2010.500073
- Harris, P. L. (2000). *The work of the imagination*. Oxford, U.K: Blackwell Publishers.
- Hayles, N. K. (2010). How re read: Close, hyper, machine. *ADE Bulletin* 150. Retrieved from <http://nkhayles.com/articles.html>
- Herman, D. (2002). *Story logic: Problems and possibilities of narrative*. Lincoln, NE: University of Nebraska Press.
- Herman, D. (2013). *Storytelling and the sciences of mind*. Cambridge, MA: The MIT Press
- Hill, S. (2010). The millennium generation: Teacher-researchers exploring new forms of literacy. *Journal of Early Childhood Literacy*, 10(3), 314-340. doi:10.1177/1468798410372820
- Howell, D. (2009). Discovering the problems and promises of hyperstories. In G. Siemens & C. Fulford (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 3926-3929). Chesapeake, VA: AACE.

Retrieved from <http://www.editlib.org/p/32044>

Hunte, B. L. & Golembiewski, J. A. (2014). Stories have a power to save us: A neurological framework for the imperative to tell stories. *Arts Social Sci J*, 5(2), 73-76.

doi:[10.4172/2151-6200.1000073](https://doi.org/10.4172/2151-6200.1000073)

Husserl, E. (1913). *Ideas*. London: George Allen and Unwin. Republished 1962, New York: Collier.

Immordino-Yang, M. H., McColl, A., Damasio, H., Damasio, A. & Raichle, M. E. (2009).

Neural correlates of admiration and compassion. *Proceedings of the National Academy of Sciences of the United States of America* 106(19), 8021-8026.

doi:[10.1073/pnas.0810363106](https://doi.org/10.1073/pnas.0810363106)

Jacobs, J., Tunnel, M. (2004). *Children's literature, briefly* (3rd edition). Upper Saddle River, NJ: Pearson, Merrill Prentice Hall.

Jenkins, H. (2004). Game design as narrative architecture. In N. Wardrip-Fruin & P. Harrigan (Eds.), *First person: New media as story, performance, and game*. (pp. 118-130).

Cambridge, MA: MIT Press.

Jewitt, C. (2013). Multimodal methods for researching digital technologies. In S. Price, C. Jewitt & B. Brown (Eds.), *The sage handbook of digital technology research* (pp. 250-265).

London, UK: Sage.

Juul, J. (1998, November). *A Clash between games and narrative*. Paper presented at the Digital Arts and Culture conference, Bergen, Norway. Retrieved from

<https://www.jesperjuul.net/thesis/AClashBetweenGameAndNarrative.pdf>

Kamil, M. L., Pearson, P. D., Moje, E. B. & Afflerbach, P. (Eds.) (2011). *Handbook of reading research, volume IV*. New York, NY: Routledge.

- Kim, K. H. (2008a). Meta-analyses of the relationship of creative achievement to both IQ and divergent thinking test scores. *Journal of Creative Behavior*, 42, 106–130.
- Kim, K. H. (2011). The creativity crisis: The decrease in creative thinking scores on the Torrance tests of creative thinking. *Creativity Research Journal*, 23(4), 285-295.
doi: 10.1080/10400419.2011.627805
- Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in dispositional empathy in American college students over time: A meta-analysis. *Personality and Social Psychology Review*, 15(2), 180-198. doi: 10.1177/1088868310377395
- Koss, M. D. (2009). Young adult novels with multiple narrative perspectives: The changing nature of YA literature. *ALAN Review*, 36(3), 73-80. Retrieved from <http://scholar.lib.vt.edu/ejournals/ALAN/v36n3/pdf/koss.pdf>
- Krasny, K. (2007). Seeking the affective and the imaginative in the act of reading: Embodied consciousness and the evolution of the moral self. In D. Vokey (Ed.), *Philosophy of Education 2006* (pp. 429-437). Normal, IL: Philosophy of Education Society.
- Krasny, K. A. & Sadoski, M. (2008). Mental imagery and affect in English/French bilingual readers: A cross-linguistic perspective. *The Canadian Modern Language Review*, 64(3), 399-428.
- Kress, G. & van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of contemporary communication*. London, UK: Arnold.
- Lakoff, G. [George Lakoff on embodied cognition and language]. (2013, October 22). Cascade theory: Embodied cognition and language from a neural perspective.
Retrieved from: <https://www.youtube.com/watch?v=XWYaoAoijdQ>

- Landow, G. P. (2006). *Hypertext 3.0: Critical theory and new media in the era of globalization*. Baltimore, MD: John Hopkins University Press.
- Lankshear, C. & Knobel, M. (2011). *New literacies: Everyday practices and social learning* (3rd edition). Berkshire, England: Open University Press, McGraw-Hill Education.
- Lanier, J. (2011). *You are not a gadget*. New York: Vintage Books.
- Laughlin, C. D., MaManus, J. & d'Aquili, E. G. (1990). *Brain, symbol & experience: Toward a neurophenomenology of human consciousness*. Boston: New Science Library.
- Lenters, K. & Winters, K-L. (2013). Fracturing writing spaces: Multimodal storytelling ignites process writing. *The Reading Teacher*, 67(3), 227-237. doi:10.1002/TRTR.1210
- Lineberger, J. (2016, November). *Isolation: A Pitfall of Online Learning*. *PBS Education*. Retrieved from www.pbs.org/education/blog/isolation-a-pitfall-of-online-learning
- Liston, D. D. (1994). Story-telling and narrative: A neurophilosophical perspective. *Reports – Evaluative/Feasibility* (142). Retrieved from: files.eric.ed.gov/fulltext/ED372092.pdfEric
- Lotherington, H. (2007). Rewriting traditional tales as multilingual narratives at elementary school: Problems and progress. *Canadian Journal of Applied Linguistics (CJAL)*, 10(2), 241-256. Retrieved from <http://www.editlib.org/j/ISSN-1481-868X/v/10/n/2/>
- Lotherington, H. & Chow, S. (2008). Rewriting *Goldilocks* in the urban, multicultural elementary school. In F. Shultz (Ed.) *Multicultural education* (14th ed.) (pp. 143-151). NY, NY; McGraw-Hill. Reprinted from *The Reading Teacher*, 60 (3), 244-252.
- Lotherington, H. (2011). Digital narratives, cultural inclusion, and educational possibility: Going new places with old stories in elementary school. In R. Page & B. Thomas (Eds.), *New*

- narratives: Stories and storytelling in the digital age* (pp. 254-276). Lincoln, NE: University of Nebraska Press.
- Lotherington, H. (2011). *Pedagogy of multiliteracies: Rewriting Goldilocks*. New York, N.Y: Routledge.
- Lotherington, H. & Jenson, J. (2011). Teaching multimodal and digital literacy in L2 settings: New literacies, new basics, new pedagogies. *Annual Review of Applied Linguistics*, 31, 226-246. doi: 10.1017/S0267190511000110
- Lotherington, H., Fisher, S., Jenson, J., & Lindo, L.M. (in press). Professional development from the inside out: Redesigning learning through collaborative action research. In M. Knobel & J. Kalman (Eds.), *Literacies, Digital Technologies and Teachers' Professional Development*. NY, NY: Peter Lang.
- Lotherington, H., & Paige, C. (Eds.) (2017). *Teaching young learners in a superdiverse world: Multimodal perspectives and approaches*. New York, N.Y: Routledge.
- Lubart, T., & Lautrey, J. (1996). *Development of creativity in 9- to 10-year-old children*. Paper presented at the Growing Mind Congress, Geneva, Switzerland.
- Luce-Kapler, R. & Dobson, T. (2005, May/June). In search of a story: Reading and writing e-literature. *Reading Online*, 8(6). Retrieved from http://www.readingonline.org/articles/art_index.asp?HREF=luce-kapler/index.html
- Luce-Kapler, R. (2006). Creative fragments: The subjunctive spaces of e-literature. *English Teaching: Practices and Critique*, 5(2), 6-16.
Retrieved from <http://education.waikato.ac.nz/research/files/etpc/2006v5n2?.pdf>
- Luce-Kapler, R. (2007). Radical change and wikis: Teaching new literacies. *Journal of Adolescent & Adult Literacy*, 51(3), 214-223. doi:10.1598/JAAL.51.3.2

- MacArthur, C.A., & Graham, S. (1987). Learning disabled students' composing under three methods of text production: Handwriting, word processing, and dictation. *The Journal of Special Education, 21*(3), 22–42. doi:10.1177/002246698702100304
- Mangen, A. (2008). Hypertext fiction reading: Haptics and immersion. *Journal of Research in Reading, 31*(4), 404-419. doi: 10.1111/j.1467-9817.2008.00380.x
- Mangen, A. & van der Weel, A. (2015). Why don't we read hypertext novels? *Convergence: The International Journal of Research into New Media Technologies (1)*. 1-16.
doi:10.1177/1354856515586042
- Miall, D. S. & Dobson, T. (2001). Reading hypertext and the experience of literature. *Journal of Digital Information, 2*(1). Retrieved from
<https://journals.tdl.org/jodi/index.php/jodi/article/viewArticle/35/37>
- Miller, C. H. (2008). *Digital storytelling: A creator's guide to interactive entertainment*. Burlington, MA: Elsevier.
- Miller, S. M. & McVee, Mary, B. (Eds). (2012). *Multimodal Composing in Classrooms: Learning and Teaching for the Digital World*. New York, NY: Routledge.
- Morgan, S. & Dennehy, R. F. (2004). Using stories to reframe the social construction of reality: A trio of activities. *Journal of Management Education, 28*(3), 372-389.
doi:10.1177/1052562904264380
- Murray, J. H. (1997). *Hamlet on the holodeck*. Cambridge, MA: MIT Press.
- Murray, J. H. (2011). Why Paris needs Hector and Lancelot needs Mordred: Using traditional narrative roles and functions for dramatic compression in interactive narrative. *Interactive Storytelling Lecture Notes in Computer science, 7069*, 13-24. Retrieved from
http://link.springer.com/chapter/10.1007%2F978-3-642-25289-1_2#page-1

- Murray, J. H. (2012). *Inventing the medium*. Cambridge, MA: The MIT Press.
- Murray, J. H. (2013). Six key design strategies for replay stories. Retrieved from <http://inventingthemedium.com/2013/05/15/six-key-design-strategies-for-replay-stories/>
- NCTE Executive Committee. (2005). Multimodal literacies and technology. Retrieved from <http://www.ncte.org/governance/MultimodalLiteracies>
- Neumeyer, P. F. (1967). The child as story teller: Teaching literary concepts through tacit knowledge. *College English*, 30(7), 515-517.
Retrieved from <http://www.jstor.org/stable/373999>
- Newman, M. L., Groom, C. J., Handelman, L. D. & Pennebaker, J. W. (2008). Gender differences in language use: An analysis of 14,000 text samples. *Discourse Processes*, 45, 211–236. doi:10.1080/01638530802073712
- New London Group (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60–92. Retrieved from http://eps415gse.pbworks.com/f/A_Pedagogy_of_Multiliteracies_Designing_Social_Futures.htm
- Nicolopoulou, A. (1997). Children and narratives: Toward an interpretive and sociocultural approach. In M. Bamberg (Ed.), *Narrative development: Six approaches* (pp. 179-215). Mahwah, NJ: Lawrence Erlbaum.
- Nicolopoulou, A. (2011). Children’s storytelling: Toward an interpretive and sociocultural approach. *Storyworlds: A Journal of Narrative Studies*, 3, 25-48. Retrieved from <http://muse.jhu.edu/login?auth=0&type=summary&url=/journals/storyworlds/v003/3.nicolopoulou.pdf>

- Nicolopoulou, A. & Richner, E.S. (2007). From actors to agents to persons: The development of character representation in young children's narratives. *Child Development*, 78(2), 412-429. doi:10.1111/j.1467-8624.2007.01006.x
- Oatley, K. (1999). Why fiction may be twice as true as fact: Fiction as cognitive and emotional simulation. *Review of General Psychology*, 3, 101-117.
- Oatley, K. (2002). Emotions and the story worlds of fiction. In M.C. Green, J.J. Strange, & T.C. Brock (Eds.) *Narrative impact: Social and cognitive foundations*, pp. 39-69. Mahwah, NJ: Erlbaum.
- Ohler, J. (2008). *Digital storytelling in the classroom: new media pathways to literacy, learning, and creativity*. Thousand Oaks, CA: Corwin Press.
- O'Donnell, J. J. (1998). *Avatars of the world: From papyrus to cyberspace*. Cambridge, MA: Harvard University Press.
- O'Neill, D. K., & Shultis, R. (2007). The emergence of the ability to track a character's mental perspective in narrative. *Developmental Psychology*, 43(4), 1032-1037.
doi:10.1037/0012-1649.43.4.1032
- Oravec, J. A. (2000). Interactive toys and children's education. *Childhood Education* 77(2), 82-85. doi:10.1080/00094056.2001.10521635
- Paley, V. G. (1990). *The boy who would be a helicopter: The uses of storytelling in the Classroom*. Cambridge, MA: Harvard University Press.
- Page, R. (Ed.). (2010). *New perspectives on narrative and multimodality*. New York, NY: Routledge.
- Palmer, R. E. (1969). *Hermeneutics*. Evanston, IL: Northwestern University Press.

- Papson, S., Goldman, R. & Kersey, N. (2007). Website design: The precarious blend of narrative, aesthetics and social theory. In G.C. Stanzak (Ed.), *Visual research methods: Image, society, and representation* (pp. 307-344). Thousand Oaks, CA: Sage Publications.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Piaget, J. (1962). *Play, dreams and imitation in childhood*. New York: W. W. Norton & Company.
- Piaget, J. (1981). Creativity. In J. M. Gallagher & D. K. Reid (Eds.), *The learning theory of Piaget and Inhelder* (pp. 221-229). Monterey, CA: Brooks-Cole. (Original work written in 1972).
- Pope, J. (2006). A future for hypertext fiction. *Convergence: The International Journal of Research into New Media Technologies*, 12(4), 447-465.
doi:10.1177/1354856506068368
- Pope, J. (2010). Where do we go from here? Readers' response to interactive fiction. *Convergence: The International Journal of Research into New Media Technologies* 16(1), 75-94. doi:10.1177/1354856509348774
- Pope, J. (2013). The way ahead: The teaching of hyper-narrative at the Bournemouth University. *New Writing: The International Journal for the Practices and Theory of Creative Writing*, 10(2), 206-218. doi:10.1080/14790726.2013.774423
- Propp, V. (1968). *Morphology of the folktale* (2nd edit.) Austin, Texas: University of Texas.
- Ranker, J. (2007). Designing meaning with multiple media sources: A case study of an eight-year-old student's writing processes. *Research in the Teaching of English*, 41(4),

- 402-434. Retrieved from <http://www.jstor.org/stable/40171741>
- Reber, A. S., Allen, R. & Reber, E. S. (2009). *Penguin dictionary of psychology*. London, ENG: Penguin books.
- Reilly, K. (1989 & 1997). *The west and the world: A history of civilization*. Princeton, NY: Marcus Wiener Publishers.
- Ris, E. (2013, November). Technology: Devices isolate us, even in schools. *The Mercury News*. Retrieved from <http://www.mercurynews.com/2013/11/21/technology-devices-isolate-us-even-in-schools/>
- Robinson, A. H. (1974). Expressed reading interests of young children: An international study. Paper presented at the International reading association world congress on reading (5th, Vienna, Austria, August 12-14, 1974. Retrieved from <http://eric.ed.gov/?id=ED096614>
- Robinson, K. (2011). *Out of our minds*. Chichester, West Sussex, UK: Capstone Publishing.
- Rosen, L. D. (2017). The distracted student mind - enhancing its focus and attention. *Phi Delta Kappan* 99(2), 8-14. Retrieved from: <http://journals.sagepub.com/doi/pdf/10.1177/0031721717734183>
- Rosenthal, A. K. & Barrager, B. (2014). *Uni the unicorn*. New York, NY: Random House.
- Rouzie, A. (2000). The composition of dramatic experience: The play element in student electronic projects. *Computers and Composition*, 17, 139-160.
- Rowan, C. (2014, January). Ten reasons to not use technology in schools for children under the age of 12 years. *Moving to Learn: Exploring the effects of technology on children*. Retrieved from <http://movingtolearn.ca/2014/ten-reasons-to-not-use-technology-in-schools-for-children-under-the-age-of-12-years>
- Ryan, M. L. (2004). (Ed.), *Narrative across media*. Lincoln, NE: University of Nebraska Press.

- Ryan, M. L. (2009). From narrative games to playable stories: Towards a poetics of interactive narrative. *Storyworlds: A Journal of Narrative Studies* 1(1), 43-60. Retrieved from <http://users.frii.com/mlryan/poetics.pdf>
- Ryan, M. L. (2010). Narratology and cognitive science: A problematic relation. *Style*, 44(4), 469-495. Retrieved from <http://users.frii.com/mlryan/cognarr.pdf>
- Ryan, M. L. (2013). Transmedial storytelling and transfictionality. *Poetics Today*, 34(3), 362-388. Retrieved from <http://users.frii.com/mlryan/transmedia.html>
- Sawyer, R. K. (2006). *Explaining creativity*. New York, NY: Oxford University Press.
- Scheff, T. J. (1979). *Catharsis in healing, ritual, and drama*. Berkley: University of California Press.
- Semali, L. M. (Ed.) (2002). *Transmediation in the classroom: A semiotics-based media literacy framework*. New York, NY: Peter Lang Publishing.
- Shlain, L. (2005). Media literacy is vital in the age of the image. *Edutopia*, September 26, 2005. Retrieved from <http://www.edutopia.org/visuall-speaking>
- Silvers, P., Shorey, M. & Crafton, L. (2010). Critical literacies in a primary multiliteracies classroom: The hurricane group. *Journal of Early Childhood Literacy*, 10 (4), 379-409. doi:10.1177/1468798410382354
- Sís, P. (1996). *Starry Messenger: Galileo Galilei*. New York, NY: Farrar, Straus and Giroux.
- Snow, C., Burns, S., & Griffith, P. (Eds.) (1998). *Preventing reading difficulties in young children*. Washington, DC: Academy Press.
- Speer, N. K., Reynolds, J. R., Swallow, K. M., & Zacks, J. M. (2009). Reading stories activates neural representations of visual and motor experiences. *Psychological Science* 20, 989-999. doi:[10.1111/j.1467-9280.2009.02397.x](https://doi.org/10.1111/j.1467-9280.2009.02397.x)

- Spradley, J. P. (1980). *Participant observation*. Orlando, FL: Harcourt.
- The Ontario Curriculum, Grades 1-8: Language, 2006 (revised). Retrieved from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/language.html>
- The Ontario Curriculum, Grades 1-8: The Arts 2006 (revised). Retrieved from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/arts.html>
- Thomas, A. (2012). Children's writing goes 3D: A case study of one primary school's journey into multimodal authoring. *Learning, Media and Technology*, 37(1), 77-93.
doi:10.1080/17439884.2011.560160
- Tompkins, P. & Lawley, J. (2003). Multiple perceptions, perspectives and perceivers. Retrieved from <http://www.cleanlanguage.co.uk/articles/articles/208/1/Multiple-Perceptions-Perspectives-and-Perceivers/Page1.html>
- Turkle, S. (2011). *Alone together*. New York, NY: Basic Books.
- Torrance, P. E. (1970). *Encouraging creativity in the classroom*. Dubuque, IA: WM. C. Brown Company Publishers.
- Varga, S. (2011): Winnicott, symbolic play, and other minds. *Philosophical Psychology*, 24(5), 625-637. Retrieved from <http://dx.doi.org/10.1080/09515089.2011.559621>
- Vasudevan, L., Schultz, K. & Bateman, J. (2010). Rethinking composing in a digital age: Authoring literate identities through multimodal storytelling. *Written Communication*, 27(4), 442-448. doi:10.1177/07410883103782172010 27: 442
- Vygotsky, L. S. (2004): Imagination and creativity in childhood. *Journal of Russian and East European Psychology*, 42(1), 7-97. Retrieved from
<https://www.marxists.org/archive/vygotsky/works/imagination.pdf>

- Walker, J. (2003). *Fiction and interaction: How clicking a mouse can make you part of a fictional world*. (Unpublished doctoral dissertation). University of Bergen, Norway.
Retrieved from <http://jilltxt.net/txt/Walker-Fiction-and-Interaction.pdf>
- Ware, P. D. (2006). From sharing time to showtime! Valuing diverse venues for storytelling in technology-rich classrooms. *Language Arts*, 84 (1), 45-54. Retrieved from <http://www.ncte.org/library/NCTEFiles/Resources/Journals/LA/0841-sept06/LA0841From.pdf>
- Whitehead, H. (2005). Taking Teachers Through the Portal - Creating tools to help teachers use Digital Writing within the curriculum. Retrieved from http://www.kidsonthenet.org.uk/teachers/downloads/NESTA_Report_June_final_part3.pdf
- Wilber, K. (2000). *Integral psychology*. Boston, MA: Shambhala.
- Winnicott, D. W. (1971). *Playing and reality*. New York, NY: Routledge.
- Zpalanzani, A. (2011). Gender Based Storytelling in Sequential Media; Case Study of Indonesia Contemporary Girls Comics. Retrieved from https://www.academia.edu/2549543/Gender_Based_Storytelling_in_Sequential_Media_Case_Study_of_Indonesia_s_Contemporary_Girls_Comics