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## Constructing Opportunities: A Multiple Case Study of the Semiotic Demands and Supports in Elementary Classroom Curricula

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Graduate Program in Education  
A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy  
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## Abstract

Limited evidence supports how multimodal pedagogy considers how modes, as constructed by teachers and children, vary across disciplines. This literature gap is potentially problematic for connections arising between facilitation of modes by educators to semiotic demands placed on children. Literature identifies multimodal pedagogy as a way to expand on traditional notions of literacy to assist children in representing meaning through modal constructions. Research focusing on spaces across curriculum available for explicit teaching of semiotics through multimodal pedagogy, and consequences when these spaces are and are not capitalized upon, is needed; it is hoped the study makes its contributions here. The study's goal was to create new knowledge about types of semiotic demands placed on children in classroom curricula (Doyle, 1992) and recommendations for educators to strengthen pedagogies supporting children's meaning making to promote inclusive classrooms.

This descriptive multiple case study (Baxter & Jack, 2008; Yin, 2009, 2012) included two separate cases of a grade 1 and 5 teacher participant and their students. Methods of a modal checklist, photographs, ethnographic methods, audio-recordings, and interviews examined semiotic demands and multimodal instruction within classroom curricula. Data were analysed by multimodal analysis (Jewitt, 2009). A curriculum document analysis (Bowen, 2009) was also conducted. The study found educators instrumental in constructing classroom curricula. They exercised their agency within an ecological context (e.g., Biesta, Priestley, & Robinson, 2015) to interpret and enact institutional and programmatic (Doyle, 1992) curricula. The study identified classroom curricula as fluid. Educators selected and used a variety of modes and resources to enact classroom curricula. Pedagogical supports for children to meet semiotic demands of the curricula were not commensurate. Supports were either not sufficiently explicit or focused on a specific mode.

The study recommendations advocate all levels of curricula to explicitly support multimodal literacy and commensurate multimodal pedagogy. They suggest educators identify semiotic demands and ensure pedagogies and assessment practices provided to children match demands. The study recommends curricula contextualize modal affordances and constraints

across disciplines, provide children with metalanguage to acquire and express situated knowledge of multimodality, and illustrations of how to construct and convey meaning leveraging multimodal resources.

## Keywords

multimodal literacy; literacy pedagogy; semiotics; elementary education; curriculum; teacher agency

## Acknowledgments

Last year, I ran my first half-marathon. For months I trained, running various routes, increasing in distance until race day. My favourite part of my practice runs was a route that started in a forest. Once I ran through that forest, I entered into a clearing looking out onto Lake Ontario. When I entered this clearing, I could run, parallel to the lake. This clearing was not only beautiful, but also significant. I knew when I reached this point the rest of my run would have beautiful views. I also knew I had run far enough to reach a running stride that allowed me to push through and keep pace on this journey that I loved so much. But, I could never have made it to that first, second, or hundredth practice run, the grueling runs in the summer heat, and the early morning runs when I didn't want to get out of bed without the support I received. I would never have made it through these runs, or to the finish line in October, if it had not been for my running partners keeping pace with me and encouraging me, or, my family, driving me to the starting line, cheering for me, and greeting me with love, hugs, warm clothes, and bananas.

After five years of my PhD journey, I can honestly say it has been like training for and running that half-marathon. It has only been possible due to the support and kindness that I received from my family, peers, and professors.

Thank you to the teacher participants, Catherine and Laura for opening up your classrooms, and sharing your experiences with me, so that I could learn from your practices.

To my supervisor, Dr. Rachel Heydon, thank you for guiding me through the trees to the clearing, even when I didn't know what route to take. Thank you for always being there as an anchor of support, kindness, and trust. I cannot put into words how truly grateful I am.

To my committee member, Dr. Kathy Hibbert, thank you for taking the time to provide your supportive feedback and for carving out an inclusive research space for me. Your kindness is truly appreciated.

To Dr. Anne Urbancic, thank you for being the person who introduced me to semiotics, and for instilling in me a love and interest for the topic that has taken me on an amazing eight-year journey thus far. I dedicate this research to you.

To my extended family and peers who continuously show their love and support, thank you for checking in with me along the way, and for encouraging me throughout this process.

To my loving and supporting family, dad, mom, and Nate, thank you for being by my side through all the tears and all the celebrations, and for all the sacrifices you made to allow me to run this race. Thank you for asking me about, then talking with me, then telling others about semiotics, multiliteracies, and multimodal pedagogy. And yes Nathan, this is the end (but also the beginning).

To each and all, thank you for making meaning in my life.

Emma

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## Chapter 1

### 1 Introduction

I entered first year university convinced I would be an English teacher, just like my mother. I began taking the courses I needed: a few humanities seminars and English courses. By the end of first year, I learned that I was *not* going to be an English teacher, but that I loved semiotics. I didn't even realize the name for what I was learning in my seminar courses until another student mentioned it was semiotics (the study of signs and their systems, and the process of meaning making). Semiotics allowed me to consider how I arrived at my meaning making via my interests, experiences, and discourses. I began to consider the world outside of the classroom through a semiotic lens, which instigated in me an interest in life-long learning.

Four years later, I had completed a degree in semiotics, and I was using the discipline to explore the elementary classroom while I completed my Master's degree. I began realizing the potential for semiotics in the classroom when I considered that, if students could be provided opportunities to explore the how and why of their meaning, the nuances and representations within this meaning could become much richer. I started believing that being cognizant of how people make meaning was critical to student success, so semiotics and its applications were important to the educational landscape.

After six years of post-secondary education, I had learned one other valuable piece of information: understanding how semiotics or meaning making fit within the educational landscape, particularly within the elementary classroom, was more complex than I originally had considered. Bringing in educational concepts such as assessment, pedagogy, student comprehension, disciplines and so forth meant extending this consideration beyond semiotics into the realm of modes, resources, discourses, and technology, which is where this study began.

## 1.1 Purpose

The purpose of this study is to create new knowledge about the types of semiotic demands placed on students in classroom curricula (what occurs daily in the classroom; the enacted curriculum [Doyle, 1992]). This new knowledge will be used to create recommendations for educators and curriculum designers. These recommendations may promote inclusive classrooms that strengthen pedagogies supporting students in their meaning making and representations of their knowledge across disciplines. The results may be used to support educators and help them recognize the semiotic demands they and the curriculum place on students. The results will also help educators to match instruction and assessment to these demands.

## 1.2 Research Problem

Multimodal pedagogy (see section 1.3 for definitions) can provide semiotic opportunities to students within classrooms (e.g., Halliday, 1978; Kress, 2009; Mavers, 2009). However, there is limited evidence to show that multimodal pedagogy considers how modes vary across disciplines, as constructed by the teacher and the student. This gap in literature is potentially problematic when considering the connections between how the educator facilitates modes (see 1.3 for definition) given the semiotic demands placed on students. These semiotic demands are understood as expressive and receptive meaning making expectations placed on students by educators through the various modes that they use or expect students to use. For example, while students may be expected to represent curriculum content within one mode or instructed in a set of modes, they may be assessed through yet another (Boatright & Wilson, 2011). Similarly, the modes used in instruction and assessment (formative or summative) may be the same, but students may not be given any instruction which allows them to make meaning in a given domain. This study examined the extent of support students receive to meet the semiotic demands placed on them within classroom curricula.

## 1.3 The Study and Background to Research

This study began from recognizing the significance of pedagogies that explore semiotics' role in teaching and learning. The study also recognized the potential of multimodal

pedagogy to support students' meaning making across the classroom curriculum. It explored multiple cases of the semiotic demands placed on elementary students within each classroom curriculum, which was a level that had yet to be studied. The study identified if and how students are given opportunities to understand and acquire facility with the semiotic elements of receptive and expressive communication in the classroom. For example, the way that modes may be constructed, the meaning that students create when they construct these modes in a purposeful way, and the potential consequences of not providing such opportunities.

The rationale for the study surrounding these ideas is located across literatures related to multiliteracies, multimodal pedagogy, multimodal literacy, and social semiotics. A group of ten scholars, The New London Group (NLG) (1996), introduced multiliteracies which broadened definitions of literacy from simple reading and writing to include practices for "negotiating a multiplicity of discourses" (p. 61), modes and media, and languages. Moving literacy to literacies was one way to signal contemporary changes in communication brought about by globalization and massive technological changes, as well as an acknowledgement of the diverse literacies needed to negotiate various domains. Multiliteracies thus allowed a focus on "globalized societies" (p. 61), cultural and linguistic contexts, and multimodality. A key concept introduced was design, where people both receive and design meaning (NLG, 1996). This meaning making introduced six different ways (or modes) to engage literacy and its meaning: "Linguistic Meaning, Visual Meaning, Audio Meaning, Gestural Meaning, Spatial Meaning, and the Multimodal patterns of meaning that relate the first five modes of meaning to each other" (p. 65). Out of these definitions, scholars, for example, Cope and Kalantzis (2009) developed these ideas further, as they laid the groundwork for considering what we now know as a mode.

Multimodal literacy emerged from multiliteracies as a concept to consider "the design of discourse by investigating the contributions of specific semiotic resources...co-deployed across various modalities" (O'Halloran & Lim, 2011, What section, para. 2). These modalities or *modes* have been and are defined as socially and culturally shaped resources for meaning making (e.g., "Image, writing...speech (and) moving image")

[Bezemer & Kress, 2008, p. 171]). Van Leeuwen (2005) likewise defined these resources as “actions and artefacts we use to communicate” called “signs” (p. 5) within semiotics. Through all forms of communication, such as those emerging as a result of technological advances, “meanings are made in ensembles drawing on and consisting of different modes” (Bezemer, Diamantopoulou, Jewitt, Kress, & Mavers, 2012, p. 3). However, when multiple modes are used, they create varying “potentials and constraints for making meaning” (Bezemer & Kress, 2008, p. 171). These variances enable educators and students “to do different work in relation to their interests” (p. 171). Therefore, providing opportunities to address modal potentials and how a mode is valued within a discipline, project, topic, etc. is essential within the context of the classroom. Thus, how students are taught or choose to select modes in accordance with their interests, and how they learn to decipher them, is key to their meaning making. Whereas meaning may be contextualized and arbitrary, it is not void of structure. As van Leeuwen (2005) argued, “meaning is (not) a free-for-all” (p. 5). This means that in the classroom, there is a need to consider the “semiotic potential of a given semiotic resource” and “how that resource has been, is, and can be used for purposes of communication” in addition to considering “their (future) uses” (p. 5). Van Leeuwen urged scholars/teachers to consider how meaning may change across disciplines because people have opportunities to “make different choices from the same overall semiotic potential and make different meanings with these choices” (p. 5) within various contexts. There emerges a need for pedagogy exploring the potentials of these modes with students, when and where students are creating multimodal texts. Thus, there is a need to consider how teachers can discuss with students how to understand the meaning they are making as well as how this meaning making may take place. This is, in part, what I observed in this study.

Given how central modes are to meaning making, it is critical to consider pedagogies that can help students attend to semiotics, and this is the job of *multimodal pedagogy*. Support for multimodal literacy has come in this form of pedagogy, defined as “a framework [for] educators...that involves constructing tasks or projects for students that requires multiple forms of representation” (Stein, 2000, p. 335) across subjects or disciplines. It is through these disciplines, defined as “ideas using...forms of



representation...to achieve a (related) set of goals” (Boatright & Wilson, 2011, p. 5), that educators can teach students how to combine modes to make meaning and represent curricular knowledge. Multimodal pedagogy has also been conceptualized as “a multiple semiotic activity in (that) teachers and learners make selections from the representation(al) resources available to them to represent their meaning within the context of communicative practices” (Stein & Newfield, 2007, p. 920). Multimodal pedagogy provides a framework for educators to account for, organize, and deal with these sign systems. According to Stein and Newfield (2007), multimodal pedagogy has conceptualized “communication in the contemporary classroom beyond the linguistic, locating language as one mode of communication amongst multiple semiotic modes, all of which function to communicate meanings in an integrated multilayered way” (p. 920). Multimodal pedagogy has also been conceptualized as a social semiotic activity (e.g., Halliday, 1978) exploring the social aspects of meaning making, relying “on use or practice” (Vannini, 2007, p. 4).

Social semiotics emerged out of a need to explore meaning making from a communicative perspective rather than just a linguistic perspective. According to Bezemer et al. (2012), it “draws attention (to) multimodal signs of learning” (p. 2) where a key concept includes “that meaning makers always draw on a multiplicity of modes to make meaning. These modes are put together, organized, arranged, into a multimodal design” (p. 3). From this position, multimodal social semiotics focuses on “how people use and continue to develop modes of communication in response to social and cultural demands” (p. 13). For educators, this would mean “using different modes in different contexts to make explicit what needs to be learnt” (p. 12). Therefore, multimodal pedagogy acknowledges “the significance of all the semiotic resources and modalities in meaning making” (O’Halloran & Lim, 2011, Media Literacy section, para. 2) and communication, not only print literacy. To present students with multimodal literacy learning opportunities, students need to be “sensitized to the meaning potential and choices afforded in the production of the text, rendering an enhanced ability to make deliberate and effective choices in the construction and presentation of knowledge” (Media Literacy section, para. 4). This means multimodal pedagogy needs to include

“explicit teaching of the affordances of modes” (Loerts, 2013, p. 57) across the classroom curriculum.

## 1.4 Curriculum Frameworks Used in the Study

This study mentions and examines three types of curriculum. The *institutional curriculum* is “provided to a school or school system” (Deng, 2017, p. 10). Previously, Deng (2009) defined this curriculum as “represented by curricular policy at the intersection between schooling, culture, and society” (p. 589). Doyle (1992) examined this curriculum as one which “serve(d) primarily to...typify schooling” to work “as a normative framework for defining and managing the work of teachers” (p. 487). Therefore, curriculum frameworks that are used by the school that influence the interpretation of the programmatic and classroom curriculum will be referred to as the institutional curriculum (as detailed in chapter five and six).

The *programmatic curriculum* focuses on the requirements and content for disciplines, and it is found within the curriculum documents which outline specific and overall objectives at various grade levels (Doyle, 1992). This study used the programmatic curriculum documents published by the Ontario Ministry of Education. Both cases or sites utilized the Ontario programmatic curriculum. However, each site utilized a different approach to operationalize the *programmatic* curriculum. Site one utilized an institutional curriculum, the Reggio Emilia approach, as detailed in chapter five. Site two utilized the *Shakespeare Can Be Fun* framework, as explicated in chapter six. The position of this study therefore is that the classroom curriculum and semiotic demands created, form a complex system. Thus, the programmatic curriculum and institutional curriculum helps to produce the classroom curriculum,<sup>1</sup> in accordance with the decision making of those involved at each level of curriculum. Thus, it is important to consider all types of curricula employed to understand which supports are drawn upon to determine how semiotic demands may be constructed and levied on students. Deng (2017) further

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<sup>1</sup> The classroom curriculum may also be called the “enacted curriculum”. Within classroom curricula, the programmatic and institutional curricula may be “enacted”, or “translated into pedagogy” (Loerts, 2013, p. 18).

explained that this programmatic curriculum is evidenced by “an organizational framework in which a school system operates and functions, serving to regulate and manage the work of teachers in classrooms” (p. 10). It is therefore the curriculum documents which “are supposed to guide what will happen in classrooms and serve as an important resource for the construction of classroom lessons and events” (p. 11).

Doyle (1992) defined the *classroom curriculum* as what occurs daily in the classroom; the enacted curriculum (see 1.1). According to Deng (2017), this curriculum is positioned between teachers and students but is produced from the educator’s interpretation of what “is in the programmatic curriculum” (p. 11). In this study, examining semiotic demands across the classroom curriculum of each case, invited me to consider how modes are positioned in disciplines within classroom curricula. I viewed disciplines within each case which were determined according to the classroom curriculum being used. How each classroom curriculum was chosen to represent each case is detailed in chapter three.

## 1.5 Modeling of the Study: Boatright and Wilson (2011)

This study is modeled in part after Boatright and Wilson’s (2011) case study entitled “Discipline Specific Forms of Transmediation in Middle School Instruction and Assessment”, which focused on the relationship between the modes used in instruction and assessment across different middle school disciplines. Their study examined 1) “discipline-specific types of representation used by six middle school teachers” (p. 2) within the classrooms and 2) “identified differences and similarities in the types of representation generated by the teachers versus those generated by the students” (p. 2). This was achieved through a social semiotic examination using classroom observation, artifacts collected from the classroom, field notes, and comparative analysis to determine that there were “distinct discipline-specific patterns in the types of representation used in each content area” (p. 2). The researchers found “a semiotic mismatch between the types of texts that teachers used to teach and the types of texts that students were expected to generate in response” (p. 2). The study found that students were expected to make meaning across sign systems (or modalities) without formal guidance. Moreover, while

students were taught the curriculum content (discipline) through one mode (e.g., gestures), they “were expected to present their understandings” (Boatright & Wilson, 2011, p. 2) for assessment and evaluation through another mode (e.g., writing). The authors discovered that, while educators were able to facilitate semiotically based multimodal texts for instructional purposes, students were not provided with the same types of opportunities when considering “their official assessment” (p. 15).

This study freshly engaged these findings by posing questions about the connection between multimodal pedagogy and semiotic demands in the classroom curriculum. This study explicitly employed multimodal literacy pedagogy to conceptualize the meaning making processes occurring in the classroom, as well as the kinds of pedagogies that might support these, which Boatright and Wilson’s (2011) study did not. Because elementary students tend to focus on “implicit and explicit meanings constructed by the multimodal texts” (Unsworth, 2014, p. 28) and older students analyze these texts, it was the expectation of I as the researcher, prior to beginning my research, that there would be an overall change in results regarding meaning making produced by students and, therefore, modal connections produced in the classroom.

## 1.6 Research Questions

The study’s main research questions are

1. What types of semiotic demands are placed on elementary aged students across the classroom curriculum?
2. What instructional supports are provided for students to meet these demands and with what implications for their communication?

Overall, I ask, what are the implications of the responses to the above questions for curriculum and pedagogy that can foster inclusive classrooms, that is classrooms where all students are supported to make meaning across the curriculum? To answer this, my sub-questions are

- A. In what ways (if at all) do the Ontario programmatic curricula<sup>2</sup> attend to semiotic issues in instructional content and assessment?
- B. What modes do educators use in their classroom curriculum?
- C. What might be the affordances and constraints for educators and students who use specific modes to make meaning from the classroom curricula in elementary classrooms?
- D. What are the semiotic opportunities provided to students through classroom assessment and are these opportunities intended by the educator?

## 1.7 Overview of Dissertation

In the current chapter, I have discussed my experiences with meaning making. I related this to the purpose and context of my study. Chapter two details the theoretical framework and literature review I conducted. This chapter is used to indicate the type of research available that focuses on multimodal pedagogy in elementary classrooms. The literature review helped me to know the types of practices I should look for when collecting data. The methodology is presented in chapter three where I discuss data collection and analysis methods used to conduct this multiple case study of a grade 1 and grade 5 classroom. A discussion of how the data was managed and organized via trustworthiness, ethics, and my positionality is also included. Chapter four explores the document analysis I conducted of the programmatic curricula drawn upon by each educator (OME, 2005; OME, 2006; OME, 2013a) to grasp supports already available to each educator. Chapter five and six detail my research findings for each classroom. In the concluding chapter seven, I explore and suggest implications, questions, and recommendations going forward. I present these implications, questions, and recommendations to present elementary teachers with opportunities to foster inclusive multimodal opportunities in the classroom.

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<sup>2</sup> The Ontario programmatic curricula examination included Language (OME, 2006), Mathematics (OME, 2005), and Social Studies (OME, 2013a) as these were the disciplines I viewed within classroom curricula. The examination is detailed in chapter four.

## Chapter 2

### 2 Literature Review and Theoretical Framework

This chapter contains my theoretical framework and the literature review. The theoretical framework explores foundational theories in terms of the multimodal practices being reviewed within the literature review, multimodal pedagogy, as well as the research questions. The literature review examines research on multimodal pedagogy.

#### 2.1 Theoretical Framework

The theories that informed the study include social semiotic and multimodal literacy theory because they inform multimodal pedagogy. Each of these theories were necessary to draw on as semiotics is foundational to multimodal pedagogy. Semiotic theory and multimodal theory were chosen for two reasons 1) they are foundational to one another 2) they are the theories that explore the processes under examination within this research (e.g., semiotic demands). Social semiotic theory considers “how meanings made with language are interwoven with meanings made with other modes within particular social contexts” (Flewitt, 2011, p. 294). Flewitt suggested there are two main ways social semiotics factors into multimodal theory 1) social processes involved in text production 2) consideration of the affordances of different modes across disciplines. Employing and discussing semiotic and multimodal theory as inherent to one another enables researchers “to understand the constraints and affordances of modes not only situated within specific disciplines, but explores what types of constraints and possibilities are evident for meaning making” (p. 295).

Semiotics, “the study of signs and their meaning for humans” (Willis, Jost, & Nilakanta, 2007, p. 168) examines how meaning is made, and various scholars have explored this process differently. Historically, this process was formed through the idea of arbitrary and non-arbitrary meaning. Ferdinand de Saussure suggested

a sign or *signifier* (which is what carries meaning) and the *signified* (the meaning) are not related in any necessary or essential way. Therefore, all...forms of signs that carry meaning are arbitrary...Charles Sanders Peirce distinguished between three types of signs:

- *Icons*, which derive their meaning from similarities between the sign and that which is signified
- *Indexes*, which have meaning based on cause and effect relationships
- *Symbols*, which have meaning based on agreement or convention. (Willis, Jost, & Nilakanta, 2007, pp. 168-9)

More recently, theorists such as Albers (2007) suggested knowledge of semiotic theory is important because “students who know what the signs they make mean...become more critically aware of how to create and interpret the signs in their own and other expressions, or semiotic systems” (p. 6). Thus, the study assumes, that disciplinary knowledge is made and communicated through signs.

The study also assumes that a rich classroom literacy curriculum would provide opportunities for students to become “sensitized to the meaning potential and choices afforded in the production of text, rendering an enhanced ability to make deliberate and effective choices in the construction and presentation of knowledge” (O’Halloran & Lim, 2011, Media Literacy section, para. 4) across the curricular disciplines. Therefore, being aware of semiotics by the educator and student may provide opportunities to create a rich classroom literacy curriculum. Albers (2007) explained this awareness as looking at “how meanings (are) communicated and how they are constructed to maintain a sense of reality” (p. 5) by educators. This awareness could also help to understand how teachers’ experiences can open possibilities for semiotics in the classroom. Semiotic theory is important here because it enables students to connect curricular expectations to modes chosen to construct multimodal literacy across disciplines.

In 1978, M.A.K. Halliday’s, *Language as Social Semiotic* critiqued traditional notions of literacy, working with the grounding assumption that “becoming literate (was) a social process” (Hall, 1987, p. 3). Social semiotic theory required those communicating to consider social change, where “language is as it is because of the functions it has evolved to serve in people’s lives” (p. 4). Van Leeuwen (2005) suggested that “social semiotics is not ‘pure’ theory, not a self-contained field. It only comes into its own when it is applied to specific instances and specific problems” (p. 2), such as when considering the communicative processes occurring in an elementary classroom. Social semiotics is realized when it engages with other theories such as multimodal literacy pedagogy.

Social semiotics uses different terms to reflect its social context. In comparison to linguistics, there is a change from “‘sentence’ to the ‘text’ and its ‘context’, and from ‘grammar’ to ‘discourse’” (van Leeuwen, 2005, p. xi). With social semiotics, there has been a shift away from the “‘sign’ to the way people use semiotic ‘resources’” (p. xi). This means that “social semiotics compares and contrasts semiotic modes, exploring what they have in common as well as how they differ, and investiga(tes) how they can be integrated in multimodal artefacts and events” (p. xi). The term resource is used “because it avoids the impression that ‘what a sign stands for’ is somehow pre-given, and not affected by its use...So in social semiotics resources are signifiers” (p. 3), where its semiotic potential is what “it affords” (p. 3). That is, “meanings” (p. 3) may have different meanings dependent upon their context, and thus must be studied “in the social context” (p. 5).

The above theoretical frameworks may be used within the context of this study as they reflect the collaborative learning processes occurring in the classroom for both educators and students. These frameworks also consider how meanings may change across the contexts of each discipline. These theoretical frameworks lend themselves to consider how students may direct their learning and meaning. They do this through the “remak(ing) and transform(ing) (of) representational resources” (Yamada-Rice, 2014, p. 156). These frameworks shape the thinking about whether or not pedagogy employed are supporting students to meet semiotic demands being placed on them to use multiple modes for meaning making. In other words, are students being supported to reach “their full (communicative) potential through the selection and interaction of modes” (p. 156) available to them?

This multiple case study explored multimodal learning opportunities presented to students across disciplines. As such, semiotic resources deployed and assessed within elementary classrooms are examined for modal patterns within discipline areas. This examination is based on the premise that multimodal literacy, like social semiotics, is understood as a “social practice” (Flewitt, 2011, p. 296). Multimodal literacy, as understood through multimodal pedagogy, operationalizes semiotics within elementary classrooms. Multimodal pedagogy in this study “involves constructing tasks...for



students that requires multiple forms of representation” (Stein, 2000, p. 335). Therefore, multimodal pedagogy “is conceptualized as a multiple semiotic activity in which teachers and learners make selections from the representational resources available to them to represent their meanings within the context of communicative practices” (Stein & Newfield, 2007, p. 920). As such, multimodal literacy as a framework focuses on “the social interpretation of language and its meanings to the whole range of modes of representation and communication employed in a culture” (Bezemer & Jewitt, 2010, pp. 4-5). Given the shift from “written language to explorations of multiple semiotic worlds of meaning” (Stein & Newfield, 2007, p. 929), the educator is therefore observed in the study in terms of the extent by which s/he “draw(s) on a much fuller repertoire of representational resources to communicate their meanings: for example, how language, action, and visual images interact to produce meaning” (p. 920). These theoretical elements make evident the need for educators to recognize and support the semiotic demands placed on students, ensure fidelity between instruction and assessment in modal terms, promote multimodal understanding and use, and do this across disciplines.

## 2.2 Literature Review

I reviewed literature pertinent to the goals, research questions, and theoretical framework of the study. The literature speaks to how multimodal pedagogy is addressed by educators through practices already initiated in classrooms and suggested practices. This review is organized according to three broad themes that I identified in the literature. These themes are multimodal pedagogy’s relationship to literacy, inclusionary classroom literacy practices, and semiotic resources. These themes illustrate examples of multimodal pedagogy in practice. These examples include instructional and assessment supports provided to students through multimodal pedagogy, how multimodal pedagogy creates inclusionary literacy practices, and the resources which produce modal affordances. I also reviewed literature focusing on multimodal pedagogy to determine how multimodal practices are currently enacted to recognize such practices in the classroom. Recognizing these practices during data collection allowed me to consider how study results may contribute to the ever expanding body of research surrounding

multimodal pedagogy, specifically in relation to creating modal supports for educators and students across the curriculum.

### 2.2.1 Definitions

I begin the literature review with definitions related to multimodal pedagogy, which are pertinent to the study, theoretical frameworks, and research as outlined in this review.

### 2.2.2 Modes

**Modes** are “regularized sets of resources for meaning making” (Rowse & Walsh, 2011, p. 55). They may take on many forms, which requires an understanding or “facility” (p. 55) with each. In multimodal pedagogy, this means determining how to develop this facility. This facility is necessary in new literacies (i.e., multimodal literacy) because “Modes have grammars: they have characteristic forms, affordances, and distinct ways of interacting with one another. Some modes are more effective than other modes for certain kinds of representational work” (Stein & Newfield, 2006, pp. 9-10).

### 2.2.3 Modal affordances

**Modal affordances** “refer to what...is possible to express and represent easily. How a mode has been used, what it has been repeatedly used to mean and do, and the social conventions that inform its use in context shape its affordance” (Jewitt, 2008, p. 247). This study explores opportunities provided to students across disciplines to understand how they develop this modal facility to understand their preparedness to create modal ensembles.

### 2.2.4 Semiotic resource

A **semiotic resource** (Jewitt, 2005) allows educational stakeholders to work at this cross section between modes and their affordances.

### 2.2.5 Social semiotics

**Social semiotics**, one of the main theoretical frameworks used for this study, “focuses on people’s process of meaning making” (Jewitt, 2005, p. 312). Thus, “A multimodal social

semiotic approach to learning...assumes that pedagogical environments...are semiotic environments: teachers and learners are constantly engaged in reading and creating signs across a range of genres, modes and discourses” (Stein, 2008, p. 875). To further clarify this approach, I have selectively paraphrased and quoted Stein’s (2008) seven assumptions related to “A multimodal social semiotic approach to learning:” (p. 875)

1. “All acts of communication are multimodal” (p. 875)
2. Modes result from culture “shaping materials into resources for meaning making” (p. 875)
3. “Human beings...shape... available (resources) for representation” (p. 875)
4. Modes carry varying affordances.
5. Meaning changes when moving across modes (transduction).
6. “Each mode is partial...to the whole of the meaning” (p. 875)
7. “Any mode may become foregrounded in a particular representation”. (Jewitt & Kress, 2003, pp. 1- 4 as cited in Stein, 2008, p. 875)

From this approach then, when a student chooses “one resource... over another” (Jewitt, 2005, p. 312) (acknowledging not all resources may be available to be chosen from), a meaning potential and affordance not only becomes evident, but also brings to light the question of how students develop/ed their choices for their meaning making, which is in part what was explored in this study.

### 2.2.6 Multimodal pedagogy

**Multimodal pedagogy** applies to how students are taught to choose appropriate modes, resources, and assume meaning affordances. Multimodal pedagogy reframes “instructional practice as multimodal” (Stein, 2008 p. 871) and refers “to curriculum, pedagogy and assessment practices which focus on mode as a defining feature of communication in learning environments. In other words, there is a recognition that all acts of communication in classrooms are multimodal” (Stein & Newfield, 2006, p. 9). Multimodal pedagogy focuses on the student and their modal constructions, considering how they use their semiotic resources. This means that multimodal pedagogy stands to “acknowledge learners as agentive, resourceful and creative” (Stein & Newfield, 2006, p.

10) as “there is a conscious awareness of the relationship between modes, learning and identity” (p. 10). As such, Stein and Newfield suggested multimodal pedagogy had “the potential to make classrooms more democratic, inclusive spaces in which marginalised students’ histories, identities, cultures, languages and discourses can be made visible” (p. 11).

### 2.2.7 Multimodal pedagogy and literacy

The literature I reviewed identified a relationship between employing multimodal pedagogy and expanding literacy practices. This relationship detailed *expanded communication options* (Heydon, 2013) amongst students in the classroom (Serafini, 2011; Unsworth, 2014). The relationship also detailed bridging classroom literacy practices with expansive literacy developed outside of the classroom (Serafini, 2011; Shaw, 2014; Walsh, 2010). Multimodal pedagogy was detailed as necessary in the expansion and production of trans-border (home-school-home) literacy practices. As described by scholars, the increasing complexity of non-classroom literacy practices mandated multimodal pedagogies as a means to produce these literacies in classroom environments, as well as to connect to student interest and experiences outside of the classroom. Shaw (2014) began this exploration of trans-border practices by explicitly pointing out that currently, various literacy curricula favour print literacy (“the reading and writing of some form of print for communicative purposes inherent in peoples’ lives” [Purcell-Gates, Jacobson, & Degener, 2004, p. 26]), while “outside the classroom walls, we all live in an increasingly multimodal world” (Shaw, 2014, p. 24). Therefore, Shaw called for a literacy framework that “involves complex social practices that include all the modes, or ways, we have for making meaning in our social cultural worlds (Kress, 2003)” (p. 19). Serafini (2011) likewise argued for the need to employ multimodal practices in the classroom because the majority of multimodal texts and literacy encountered by youth are outside of the classroom.

Scholars also offered examples in terms of how multimodal connections can bridge the school-home divide. Shaw’s (2014) case study introduced how an educator combined multimodal literacy and visual art to teach a grade three student how to view a text from a social semiotic perspective. The student was taught to make meaning from the reading

and relate it to their experiences. At the same time, the educator implemented the multimodal and constructivist “Visual Thinking Strategies (VTS) (Visual Thinking Strategies, 2014)” (p. 22). This framework combined visual art and literacy “to help students develop aesthetic and language literacy and critical thinking skills” (p. 22). It also worked towards helping students and teachers “construct knowledge and meaning from their experiences” (University of Sydney, 2015, Constructivism section, para. 1). Shaw determined that providing these types of multimodal opportunities where students were encouraged to connect their experiences and lives to their reading provided a more inclusive classroom for all learners. This inclusive classroom accommodated all students’ ways of knowing - suggesting no types of knowledge were privileged over others. Here, multimodal pedagogy as a framework was used to help students decode the modes they were using in collaboration with their experiences.

Likewise, Walsh’s (2010) article *Multimodal literacy: What Does it Mean for Classroom Practice?* examined a year one classroom to situate multimodal practice to connect to experiences and literacy practices outside of the classroom. In total, Walsh explored nine separate case studies to provide “evidence that teachers can combine the teaching of print-based literacy with digital communications technology” (p. 211) where multimodal pedagogy and literacy are a direct “response to contemporary communication and learning contexts” (p. 211). Walsh described students engaged in “a number of concrete experiences, linked to reading and writing activities...to develop their understanding of the lifecycle of a chicken” (p. 219) through multimodal activities such as “observing chickens hatch and grow, designing a hatchery, creating clay figures for a Claymation story of the lifecycle of a chicken, and cooking” (p. 219). This case study demonstrated that the students could expand their communication practices as traditional literacy practices were extended through “integrated, multimodal processes” (p. 220). Students were provided with multiple avenues to develop meaning making on one subject. For the purposes of this study, explaining these examples to educators would not only help situate their literacy practices, but would also highlight multimodal pedagogy as an avenue to support students’ meaning making, and expansive communication options across disciplines. Multimodal pedagogy served to make sense of the modes that students bring with them into the classroom from the multimodal world to apply to

current curricular literacy expectations. From these explorations, multimodal pedagogy was/is suggested as a way to work with sign systems that often overlap such as visual arts, mathematics, dance, and written language. These systems help people make sense of the world and expand their understandings of what it means to be literate.

Multimodal pedagogy was offered as a means to support the expansion of communication options in accordance with curricular frameworks and bulletins. Australia, Alberta, and Ontario are some examples of these curricular frameworks that detailed support for multimodal literacy. Each of the curriculum documents named below provided evidence for how multimodal literacy provided opportunities to expand communication options amongst students. For example, Unsworth (2014) explained the Australian English curriculum has begun to provide students (grades 6-10) with opportunities to expand communication options with multimodal texts, “recognized as a crucial aspect of reading comprehension in a number of official school syllabi” (p. 26). Likewise, the *Growing Success* kindergarten addendum (OME, 2016) for Ontario suggested educators pay attention to the ways students communicate their understandings through various modes.<sup>3</sup> The OME (2013b) bulletin entitled *Paying Attention to Literacy- Six Foundational Principles for Improvement in Literacy, K-12* was explicit with multimodal literacy terminology to explore how literacy learning was beginning to evolve. For example, “today’s multimodal, digitally rich contexts” (p. 2), “multimodal texts” (p.4), and “multiliterate” (p. 2). Similarly, Bainbridge and Heydon’s (2016) review of Canadian language arts curriculum documents found that all curricula share the understanding that literacy was inclusive of all the language arts (i.e., reading, writing, speaking, listening, viewing, and representing). However, Walsh (2010) made evident that literacy internationally has been “in a transition stage” (p. 212) to multimodal literacy, meaning there are still “educational policy and curriculum documents (that) have not yet adapted

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<sup>3</sup> Whereas this literature review compares other national curricula to the Ontario curriculum, there are other provincial documents that refer to multimodal terminology. For example, the *Alberta Government Learning and Technology Policy Framework* (Alberta Government, 2013) uses such phrases as: “multimodality of digital content” (p. 15), “multiple literacies” (p. 6), and “multi-modal communication and information” (p. 41).

to changes” (p. 212), and thus, multimodality may be still implicitly implied in certain curricula. Therefore, exploring if, why, and how educators are implicit or explicit with the multimodal terminology they use will be important to when I’m examining how educators construct literacy opportunities.

Other scholars address forms of multimodal literacy pedagogy more explicitly, and these may be used alongside the Ontario programmatic curriculum documents. For example, Cowan (2015) looked specifically at the Reggio Emilia approach to explore how multimodal literacy may attend to issues of semiotics to expand student communication options. Cowan detailed the key ‘hundred languages’ approach which allows students to explore meaning making through multiple “forms” (p. 13). The approach as described advocates for a “range of materials” (p. 2) to be used as well to communicate through.

Likewise, a report published by OME (2004) entitled *Literacy for learning- the report of the expert panel on literacy in grades 4 to 6 in Ontario* explored how a literate learner was a student described as multimodally literate. The document cites an adaptation of Freebody and Luke’s (1990) four resources model of a “literate learner” (OME, 2004, p. 8) to do so. The four resources model of reading posited “roles for the reader in a postmodern, text-based culture” (Luke & Freebody, 1999, p. 1). Luke and Freebody suggested that literacy was no longer about “skill development” (p. 2) and was instead about teaching students how to develop their “agency” (p. 2) to “manage texts” (p. 2). Literacy was thus defined as an “institutional shaping of social practices and cultural resources...and about access to technologies and artifacts” (p. 2). Whereas the four resources model described the areas of development for the reader as “code breaker (coding competence), meaning maker (semantic competence), text user (pragmatic competence), text critic (critical competence)” (p.1), the Ontario Ministry of Education (2004) described the roles as follows:

Meaning Maker- Uses prior knowledge and personal and/or world experiences to construct and communicate meaning when reading, writing, speaking, listening, viewing and representing.

Code User- Recognizes and uses the features and structures of written, visual and multimodal texts, including the alphabet, sounds in words, phonemic awareness,

phonics, spelling, conventions, sentence structure, text organization and graphics, as well as other visual and non-visual cues to break the “code” of texts.

Text User- Understands that purpose and audience help to determine the way text is constructed

Text Analyzer -Understands that texts are not neutral; that they represent particular views, beliefs, values. (p. 9)

More generally, literacy as described within the report was defined as “the ability to use language and images in rich and varied forms to read, write, listen speak, view, represent and think critically about ideas. It enables us to share information, to interact with others, and to make meaning” (OME, 2004, p. 5). This document states that “not all the texts they meet are in print form” (p. 6), which is similar to multimodal literacy, and even went as far to define a multimodal text as a way “to draw attention to the many ways in which texts can be produced and shared – in print, electronic, and graphical forms” (p. 6). Here, multimodal pedagogy is connected to literacy as a way to expand communication options as “the goal of all literacy instruction is (described as the ability) to enable students to make meaning from and in the wide range of texts they will encounter and produce at school and in the world” (p. 12).

The extent that these documents advocate for multimodal pedagogies, especially across the curriculum, may still need to be considered. Therefore, there is a need to explore how they are actualized in the classrooms. This study conducted an analysis of the programmatic curriculum documents being used by the teacher participants to consider how these evolving supports provide(d) opportunities for teachers to explore multimodal pedagogy across the curriculum. My study therefore considered how classroom curricula was constructed to include multimodal literacy learning opportunities for students.

Scholars discussed as well using multimodal pedagogy as a means to expand communication options (Heydon, 2013) to develop students’ engagement with literacy (Nilsson, 2010), as well as their literacy skills (Boyle & Charles, 2014; Cowan, 2015; Shanahan, 2013). For instance, Nilsson, (2010) explored how multimodal pedagogy may redefine how a literate student was understood in the classroom. In the study, a child presented as regularly uninterested and unwilling to participate in classroom literacy



activities became motivated as a storyteller when presented with opportunities to create multimodal digital storytelling. However, when Nilsson (2010) speculated if the child was literate, he explained:

If understanding literacy as a social and cultural activity where semiotic means of different kinds are used for producing texts in processes of expressing and creating meaning and communicating, then Simon is highly literate. But if literacy is limited to forming and decoding letters then Simon is not. (pp. 157-8)

Here, it was evident that multimodal pedagogy presented as a means to expand communication options and enabled students to work outside of traditional definitions of literacy. However, there is still room to research how multimodal pedagogy, given semiotic demands, may be implemented so that students may be supported in non-traditional literacy practices.

Certain scholars (Boyle & Charles, 2014; Shanahan, 2013) discussed how educators can support students using non-traditional literacy methods. Boyle and Charles (2014) explored multiple case studies to assist educators in supporting students using non-traditional literacy methods. For example, “how to ‘scaffold’ a child struggling with the alphabet to write a decodable sentence independently through semiotics, pictures, and other signs” (p. 2). The authors found when introducing “a range of modalities” (p. 50), they were able to “support and scaffold a significant improvement of [students’] storytelling skills from...baseline...to...more developed stages of narrative form” (p. 50). Shanahan (2013) used a case study of one grade five class to explore multimodal composition and the connection between content knowledge and multimodal representation. Shanahan posited that developing situated multimodal communication may ensure that educators would not “miss opportunities to advance students’ learning because teachers can only realize the potential of semiotic modes when they have developed the knowledge for recognizing them (King & O’Brien, 2002; Kress & van Leeuwen, 2001)” (Shanahan, 2013, p. 86). Shanahan also suggested that for multimodal pedagogy to be developed in a meaningful way, “theorists and researchers agree that teachers will need to make considerable pedagogical changes, and the culture of schools as related to dominance of print-based forms of communication will need to shift” (p. 86). Multimodal communication and representations were established as alternatives to

traditional literacy. However, there is a chance that favouring specific modes in representational ensembles or disciplines may still be an issue. Thus, to develop multimodal literacy pedagogy, an explicit conversation about semiotic demands, and multimodal designs is necessary, and this study explored this through interviews.

Thus, by teaching students about combining modes and making meaning, multimodal pedagogy is a way to create rich literacy practices within the classroom curriculum. However, further research into modal affordances and constraints across the curriculum in an Ontario context, would provide further information and provide further examples and solutions for how to implement and assess multimodal literacy.

### 2.2.8 Multimodal pedagogy and inclusionary practices

Literature reviewed suggested multimodal pedagogy enables educators to create inclusive classrooms via connections to out-of-classroom practices (Hibbert, 2009; Serafini, 2011). It also showed connections to student social and cultural understandings, and identity (Ajayi, 2008; Jewitt, 2008; Mein, 2011; Stein, 2000; Stein & Newfield, 2007). Inclusive refers to practices which not only seek to include students' cultural and social experiences, but also their literacy practices developed outside of the classroom as well. For example, Hesterman (2017) explored the convergence of multiliteracies pedagogy within the Reggio approach as it enabled "teachers (to) be sensitized to cultural and linguistic diversity among students and (to) adopt a broadened definition of literacy" (p. 360). Likewise, Serafini (2011) suggested an establishment of multimodal literacy practices in the classroom because they were best representative of literacy practices encountered by students outside of the classroom (namely via multimodal texts). Serafini claimed most literacy encountered by students was outside of the classroom, and most of these texts were increasingly multimodal. Serafini discussed multimodal pedagogy as inclusive of students' literacy practices, including their at-home literacy practices. Due to this inclusivity, Serafini suggested multimodal pedagogy as essential for the classroom for students to develop proficiency in all multimodal texts they encounter.

Jewitt (2008) explained that the boundaries between literacy practices at home and school are "collapsing" (p. 242) and that because of these changes in boundaries, there was a

need for current classroom literacy requirements to exchange traditional definitions of literacy for “visual and multimodal forms of representation (Bachmair, 2006)” (p. 243). Jewitt referenced multiliteracies as a starting point, attending to the “wide range of literacy practices that students are (now) engaged with” (p. 245) which would make “the classroom walls more porous and...take the students’ experiences, interests, and existing technological and discourse resources as a starting point” (p. 245). By providing students with a classroom environment which may be more reflective of their everyday lives, the less likely this change in pedagogy is “to alienate young people and...diminish the development of their full scholastic potential” (Hibbert, 2009, p. 204).

Multimodal pedagogy was considered a way to create meaning making practices that include student identity. For example, Mein (2011) suggested multimodal pedagogy works towards “collective identity-building and social action aimed at transforming political, economic, and discursive oppression” (p. 297). Ajayi (2008) argued that educators adopting multimodal pedagogy enabled students to create and “shape the cultural, social, and political contexts of their lives” (p. 227) within their subsequent literacy practices. Here, multimodal pedagogy was a way to challenge traditional forms of literacy pedagogy (i.e., forms that valued print literacy only). To Ajayi, multimodal pedagogy provided students with space to connect their own understandings or meaning making to the literacy curriculum content through diverse modes. Ajayi argued meaning was and is considered to have “two constitutive elements—reflection and action (Freire, 2000). The learner chooses, after reflection, the meaning that represents his or her perspective out of the possibilities afforded by the society” (p. 211). Thus, effective multimodal pedagogy enabled students to “learn how to relate the common characteristics and unique features of the different semiotic modes across different textual forms and diverse social and cultural contexts where they seem to function effectively” (p. 227).

The literature identified multimodal pedagogy as a way to make connections to student identity using representations. For instance, Stein (2000) suggested that students must understand that “different communities privilege particular representational resources and background others” (p. 334). Using representational resources within multimodal

pedagogy Stein offered as way to encourage teachers to consider how the classroom “becomes(s) a complex space founded on the productive integration of diverse histories, multiple modes of representation, epistemologies, feelings, languages, and discourses” (p. 334). Rethinking resources for multimodal pedagogy is described as encouraging students to not only extend beyond traditional forms of language and communication into “gesture, sounds, images, textures, and silences” (p. 334), but to encourage students to recognize “the limits of language as a channel for expressing the arc of human experience” (p. 334).

Multimodal pedagogy can help students make connections to their identity. Stein and Newfield (2007) established multimodal pedagogy as a way to help students make representational connections within their meaning making practices. They suggested that meaning making occurs when students are provided opportunities to represent their understandings from “culture, history, memory, gender, class, and affect” (p. 921) through the deployment of modes taught. Jewitt (2009) related modes to cultural institutions similarly as a means to connect the individual to meaning making. Jewitt (2009) claimed, “The ‘semiotic reach’ of modes- what can be expressed readily or at all by image, speech, gesture...is always specific and partial in any one culture...Societies have modal preferences” (p. 57). Students connect with, represent, and reflect on the classroom curriculum in accordance with their identity, social positioning, linguistic background, and experiences. However, for students to develop this agency and make connections between their representations and identity, modal affordances and constraints must be taught. This means that educators need to not only be aware of modal affordances, but they must also know how to support students’ various understandings of modes. This study examines how this is done/accomplished.

In sum, multimodal pedagogy is a way to teach students about modal affordances and representational opportunities, to create inclusive practices, which connect to student experiences and cultures. However, how semiotic connections and modal affordances relate to classroom curricula requires further research, and this is the basis for certain goals of the study.

### 2.2.9 Multimodal pedagogy and resources

There is a symbiotic relationship between resources (semiotic and tangible) and multimodal pedagogy, where resources identified the need for the explicit teaching of multimodal pedagogy (Kress, 2011; Pantaleo, 2012; Serafini, 2012, 2015; van Leeuwen, 2005), and resources encouraged the use of multimodal pedagogy to develop meaning making opportunities (Jewitt, 2008; Little, Twiner, & Gillen, 2010; Lotherington, 2011; Pantaleo, 2012; Stein & Newfield, 2007). For example, Stein and Newfield (2007), discussed the need for multimodal pedagogy so that students understood the meaning behind the choices they were making to communicate with specific resources. Similarly, Murcia (2014) explained that educators must utilize specific resources to “support students’ knowledge building and continuity in learning” (p. 76) to enact multimodal pedagogy.

Multimodal pedagogy is increasingly becoming necessary in classrooms as students’ interactions with resources, including technology, now mean reading a passage is a process of deconstructing design. Literacy does not simply mean proficiency in reading but proficiency in understanding the meaning behind the design, and thus, developing facility with using modes across disciplines. Kress (2009) explained that “different modes offer different potentials for making meaning” (p. 79). For example, while traditional literacy practices offer “words, clauses, sentences” (p. 79) so do multimodal resources have “font, size, bolding, spacing, frames, colour” for graphic elements and “syntactic, textual and social-semiotic resources (e.g. sentence, paragraph, textual block, genre)” (p. 79). This can even be extended to “space between words or around paragraphs...often in different colours, on surfaces such as pages or screen” (p. 79). Therefore, these various forms of modalities “all lead to the conclusion that meaning can be obtained and retrieved from outside the realm of the 26 letters of the alphabet” (Kress, 2009, p. 79). As well, Bezemer and Jewitt (2009) described how the meaning potential and affordance of semiotic resources was considered “highly contingent upon the person (sign-maker) ‘choos[ing]’ a semiotic resource from an available system of resources. They bring together a semiotic resource (a signifier) with the meaning (the signified) that they want to express” (p. 4). Bezemer and Jewitt therefore made evident that student

choice amongst resources tied to experiences, demands pedagogies that consider modal affordances and constraints. How this facility with modes can be developed is in part where this study hopes to contribute. Furthermore, it is understood “the more a set of resources has been used in the social life of a particular community, the more fully and finely articulated its regularities and patterns become” (Jewitt, 2008, pp. 247). Thus, semiotic resources need to continuously be adopted and explored (in terms of their affordances and constraints) within the classroom, which multimodal pedagogy promotes.

Because resources are intrinsically linked with modes, the literature calls on multimodal pedagogy to be included in classroom practice. For instance, van Leeuwen (2005) discussed the affordances of semiotic resources as a way to delve further into modes, considering their heritage as embedded within contextualized practices. As such, when teachers have students explore the “semiotic potential of a given semiotic resource” (p. 5) they are “studying how that resource has been, is, and can be used for (multiple) purposes of communication” (p. 5) as “modes are constantly transformed by their users in response to the communicative needs of communities, institutions, and societies” (Jewitt, 2008, p. 247). Serafini (2012) likewise explained that multimodal texts are a way to “present information across a variety of modes including visual images, design elements, written language, and other semiotic resources” (p. 27).

Another scholar, Pantaleo (2012), used multimodal pedagogy to suggest the employment of resources provided ways for students to make multiple types of meaning. Pantaleo’s case study discussed colour as a semiotic mode of one elementary student. The project focused on “developing student visual meaning-making skills and competencies by focusing specifically on a selection of visual elements of art and design in picture books and graphic novels” (p. 147). For example, Pantaleo encouraged an “understanding of the meaning potential of each element of design” (p. 147) in the fine arts to explore the student’s “strategic use of colour in the multimodal print text she composed” (p. 147). The study found that the student could explicitly communicate (during interviews) his/her purposes for their adoption of specific semiotic resources. For example, the student discussed colour choice as representative of her parents’ personalities, and as a means to

develop colour combinations which were purposefully constructed to create a more interesting piece of art. Pantaleo concluded that “students need opportunities to talk about the content of their multimodal texts, as these artefacts are representations of learning (Pantaleo, 2009a, b, 2010, 2011a, b)” (p. 153) as here, colour enabled the student to “represent both specific and general ideas” (p. 1). Such a conclusion made evident that meaning making can be purposeful when students are provided with a framework to adopt multimodal strategies.

Another scholar, Serafini (2015), described picture books as a resource with semiotic properties, advocating for multimodal pedagogy as a way to “work within and across multiple sign systems to construct meaning (Siegel, 2006)” (p. 412). Serafini used children’s books as an example of a multimodal text “print-based and digital texts that utilize more than one mode or semiotic resource to represent meaning potentials, where mode is defined as a socioculturally shaped resource for meaning making” (p. 412). Serafini suggested three components for educators to draw students’ attention to when developing multimodal literacy through resources namely “1) textual elements (written language), 2) visual images (photography, painting, graphs, drawings, and charts), and 3) design features (borders, typography, and other graphic design features)” (p. 413). As described, these components may be used together to develop multimodal analysis for resources, where students can consider

1) the sites of production, and 2) the sites of reception (Rose, 2001). Sites of production involve the intentions of the author, illustrator, and publisher; the time and setting of when the text was produced; and how the book is marketed and distributed. (p. 418)

Thus, Serafini argued resources become essential to deploying multimodal pedagogy because they create opportunities to facilitate meaning making, representation, and connections to student experience across modes. Multimodal pedagogy means not only exploring the affordances and constraints of the design elements available to students, but also looking at to what extent students are supported to develop this repertoire.

Multimodal pedagogy is important because it recognizes the agency that students have when using resources, and it explores ways in which students can make purposeful design

choices. Kress (2005) suggested that it was necessary to recognize “the interested action of socially located, culturally and historically formed individuals, as the remakers, the transformers, and the reshapers of the representational resources available to them” (p. 151). With responsibility placed on those who are choosing and representing resources (teachers or students), Stein and Newfield (2007) suggested that “meaning making is constantly in flux as learners make signs in response to other signs in a never-ending relation of initiation and responsiveness” (p. 920). For example, Little, Twiner, and Gillen (2010) described how semiotics resources were “harnessed by teachers” (p. 130) via an interactive whiteboard. This whiteboard allowed for a “multimodal orchestration of resources” (p. 130) where the authors could examine “how teachers and students ‘choose from, engage with, and in the process transform, the representational and communicational affordances . . . of all the modes available to them in the classroom’ (Bourne & Jewitt, 2003, p. 71)” (p. 131). For example, the sound emitted from the interactive whiteboard indicated the commencement of the lesson and helped to contextualize the subject content. Thus, these resources made evident that various modes may have multiple meanings, and thus, there is a need to develop multimodal pedagogy so that the “orchestration of resources” (p. 138) were purposeful. Likewise, Jewitt (2008) examined technology as a resource as students engaged “with computer applications multimodally” (p. 7). Through interactions with a computer screen, students interacted with various modes “they point(ed), gesture(d), gaze(d) at the screen, they move(d) the mouse...click(ed) on icons and sometimes...talk(ed). Students learn(ed) from all the modes present on the screen and around it” (p. 7). Thus, in using these resources, students were afforded opportunities to learn how to design multimodally with technology.

Another example in the literature of how semiotic resources may be combined in purposeful ways comes from Lotherington (2011). Her research came from a public school “designated as a pedagogically innovative school in its uses of information and communications technology” (p. 4). She examined “What constitutes success in literacies acquisition” (Lotherington, 2011, p. 5) as well as “obstacles...children face in acquiring school literacies” (p. 5). She uncovered classroom examples of opportunities presented to students to practice multimodal literacy which, when presented,



encompassed a multitude of semiotic resources. Lotherington explained that “these means of communication are joined in sequence (i.e., transmodal communication), and presented as a collage (i.e., multimodal communication)” (p.16). Lotherington described how the educator combined “students’ oral and literate work” (p.8) which created multimodal activities via digital platforms such as “PowerPoint presentations, which are then recited to the class who simultaneously watch the written and illustrated forms on the screened backdrop” (p. 16). Thus, at this school, the employment of semiotic resources meant essential literacy was not only limited to being able to “read and write alphabetic print” (p. 8), but was also extended to the nonlinguistic, digital, and numerical literacies to provide students with expanded communication options.

Lotherington (2011) also explored the decision making involved within creating a multimodal text by asking the following questions: “multimodality: how can I combine these modes in a text?”, “transmodality: how can I link this mode of expression to other modes sequentially?”, and “aptness: What work does the meaning making resource do?” (p. 159). As mentioned previously, when these modes are used comparatively to create these texts, they create varying “potentials and constraints for making meaning. This enables sign makers (in this case students) to do different work in relation to their interests” (Bezemer & Kress, 2008, p. 171). As such, semiotic resources are critical to a multimodal literacy framework because they extend language across disciplines into modes. Observing how teachers facilitate modes within the classroom will work towards establishing semiotic demands placed on students.

It is evident that this pedagogy provides an opportunity to expand on traditional notions of literacy. Multimodal pedagogy can engage students and assist them to represent meaning and identities through modal constructions. While multimodal pedagogy has already been established in the curricula of certain countries (e.g., Australia), there are still problems related to accessing resources, developing curricular frameworks, and assessing this new type of pedagogy. The literature within this area is also still relatively small. Overall, there is a need for research that focuses on the spaces across the curriculum that might be available for explicit teaching of semiotics through multimodal pedagogy, and the consequences when these spaces are and are not capitalized upon

(including through assessment practices). This is where this study aims to make its contributions.

## Chapter 3

### 3 Methodology

This chapter outlines the methodology of the study. It begins with a description of why case study research is aptly suited to this study and is followed by a synopsis of case study research, highlighting connections to the aims of the research. The chapter then addresses the specific methods I employed such as data collection and analysis methods. The chapter concludes by addressing ethics, how trustworthiness was achieved, and my positionality.

This study aimed to develop an understanding of semiotic demands in two elementary classroom curricula. In these two classrooms, it examined the presence/absence/type of multimodal instruction, and assessment in the bounded space of two elementary classrooms. Case study, as a methodology, enables the study to achieve these ends. A “qualitative case study is an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources” (Baxter & Jack, 2008, p. 544). When a case study “contains more than a single case” (p. 550), a multiple case study is employed, “allow(ing) the researcher to analyze within each setting and across settings” (p. 550). This study was designed to achieve its objectives through a descriptive multiple case study as outlined by Baxter and Jack (2008) and Yin (2009, 2012), with a multimodal analysis (Jewitt, 2009).

In this research study, the two elementary classrooms each represented a separate case because “the context (was) different for each of the cases” (p. 550), thereby requiring a multiple case study. Like Dyson and Genishi (2005), the study identified each classroom curriculum as a case, in part because of the “complex dynamics” (p.17) that occur within the classroom as well as “locally informed” (p.17) constructions (i.e., the classroom curriculum as it was constructed between the teacher and students, resulting from the employment of including but not limited to semiotic resources and modes). Using a multiple case study therefore “enables the researcher to explore differences within and between cases” (Baxter & Jack, 2008, p. 546).

This study employed a descriptive case study. According to Yin (2003), there are three types of case studies including exploratory, explanatory, and descriptive. In that exploratory case studies use “fieldwork and data collection...prior to the final definition of study questions and hypotheses” (p. 6) and explanatory case studies focus on explaining “cause-and-effect relationships” (p. 7), neither were appropriate for this study. However, the descriptive case study focuses on experience (Stake, 1995), as well as “answer(ing) questions based on theory” (Armfield, 2007, p. 66). As the phenomenon in question was the pedagogical facilitation of modes and semiotic demands placed on students, a descriptive case study was apt. It was further appropriate as the research questions for this study worked towards creating knowledge about how to create expanded communication options, rich literacy practices, and seamless transitions between instruction and assessment used. This stems from, and is based upon, the theories of multimodal pedagogy, semiotics, and multimodal literacy.

Additional considerations I utilized included binding the case. Baxter and Jack (2008) put forward the historical notion of “binding the case” (p.546), citing Yin (2003) and Stake (1995) to determine what would be excluded from the case to create a more specific question that has reachable objectives. Binding examples include “(a) by time and place (Creswell, 2003); (b) time and activity (Stake); and (c) by definition and context (Miles & Huberman, 1994)” (p. 546). This study was bound by all three measures. All procedures took place in the classrooms, where each visit lasted a maximum of two hours, thereby binding by time and place. Moreover, by exploring the phenomenon within the classroom curriculum, I was bound by activities that were produced from these disciplines as well as time (e.g., repetitive scheduling of these activities). Finally, inclusion and exclusion criteria set forth for the teacher participants enabled a binding by definition and context.

### 3.1 Participant Recruitment and Site Selection

The study used purposive sampling (non-probability) to determine participation, including participant inclusion and cases selected due to the curricular frameworks each classroom curricula employed. Purposive sampling enables “identify(ing) participants who are likely to provide data that are detailed and relevant” (Oliver, 2006, p. 245).

Purposive sampling involves designing a sample “for a specific purpose” (Cohen, Manion, & Morrison, 2000, p. 103); in this case that was teachers that adhered to the inclusion and exclusion criteria of being an elementary teacher who currently teaches in a primary/junior classroom (grades 1,2,4 or 5) and who agreed to be audio recorded (see Appendix B1 and K1 ). By selecting participants that adhered to these criteria rather than drawing from “the wider population” (p. 104), the sample was selective, and therefore, purposive.

I selected sites believed to be responsive to the research questions. I selected these sites as both were compelling cases for semiotic demands and assessment. Both sites utilized the Ontario programmatic curriculum. Additionally, site one used the Reggio Emilia institutional curriculum and site two opted into the cloud curriculum, *Shakespeare Can Be Fun*. There was diversity in terms of ostensibly offering semiotic opportunities. Each approach is explicated in their respective findings chapters. Examining sites which shared the Ontario programmatic curriculum yet differentiated in the curricula used to operationalize this curriculum assisted in determining if multimodal literacy pedagogy and the demands placed on students stemmed from teacher decision making, a particular curriculum in place, or the interpretation of the curricula used.

Whereas the additional curriculum frameworks were/are intended to support student meaning making, examinations against the programmatic curriculum may highlight their congruencies and incongruencies to determine where recommendations will need to be made to strengthen multimodal learning opportunities. Thus, these cases were chosen because their cross-examination were believed to answer:

- 1) Does the programmatic or institutional curriculum utilized need to be based within multimodal literacy to facilitate meeting semiotic demands?
- 2) How do different levels of curricula interact with the programmatic curriculum to produce specific forms of semiotic demands?
- 3) Do different levels of curricula hinder meeting semiotic demands when interacting with one another?

Determining the number of sites (two classrooms of teacher participants) was based partly by reviewing case study literature (e.g., Guetterman, 2015; Yin, 2004), which suggested sample sizes. Yin (2004) declared “One of the most common misconceptions...is believing that case studies are to represent a formal ‘sample’” (p. 7). Instead, in using “purposeful sampling...sample selection should be dictated by a replication logic instead of a statistical one...subsequent sites being used either to confirm or refute previous findings” (Audet & d’Amboise, 2001, p. 1). Thus, two sites (classrooms) remained feasible (Dyson & Genishi, 2005) in terms of volume of data collected as well as not exceeding Creswell’s (2013) suggested sample size for the case study methodology of “no more than four to five cases” (Guetterman, 2015, para 7). As well, two sites over one site were chosen to yield more variation and depth. Two sites allowed me to find teachers who exhibited a variety of background experience (i.e., teaching different grades [1 and 5]). The two sites also allowed me to examine different classroom curricula, which would possibly affect results by confirming or refuting findings. Determination of number of sites was also based on participants able to be recruited.

Participant recruitment and site selection featured separate methods for each of the two sites. Site one was an independent school that operated from a Reggio Emilia approach. Site one was a private school, defined as a school which does “not receive any funding or other financial support from the government” (OME, 2018, private elementary and secondary schools section, para. 1). The educator in chapter 5 explained site one did draw on the Ontario curriculum and thus, the curriculum document analysis of the Ontario programmatic curriculum was necessary for both sites. As the Reggio Emilia approach was used across the disciplines, I chose the disciplines to view, which included Language, Social Studies, and Mathematics. These disciplines were the same disciplines viewed in the Boatright and Wilson (2011) study, excluding only the Earth Science discipline as this was not an independent discipline in the grade one programmatic curriculum.

Site two was one site operating within a large-scale study entitled *21<sup>st</sup> Century Literacies: Research and Development of a ‘Cloud Curriculum’* (funded by a Social Sciences and

Humanities Research Council of Canada Partnership Development Grant). This study built/builds “on the preliminary partnership between Western University and QWILL Media and Education Inc.” (Hibbert, 2016, p. 1) which aimed to create “a Canadian-led network of researchers, educators, public not-for profit and private partners interested in accelerating the research and actualization of visions of a 21st -century education” (p. 1). As a result of this partnership, “the development of (a) fluid and dynamic ‘cloud curriculum’” (p. 1) was created. This cloud curriculum sought to “prepare students with 21<sup>st</sup>-century literacy” (p. 1) skills. Using this curricular program or ‘digital sandbox’, the aim was “to help build a collaborative partnership (to) learn together about what is possible in education (to) generate new models for curriculum” (p. 1). This ‘digital sandbox’ was used as a “prototype shared experience” (p. 1) from which any of the researchers involved within this study could mobilize learning. This project therefore examined “the ways in which participants become “knowledge makers” and designers of their own learning” (p. 1) through five components;

- 1) An analysis of the current design in relation to P21 and C21 visions and “Learning By Design” (Cope & Kalantzis, 2010; forthcoming);
- 2) piloting with educators in both school and community settings in international contexts;
- 3) research and development of multimodal (e.g, textual, aural, visual) forms of “pedagogical documentation” and assessment practices;
- 4) creation of a flexible design and response cycle to guide the prioritization of development;
- 5) working with policy makers to ensure appropriate and supportive policies are in place. The proposed project will span three years. (p. 5)

This study worked within the third postulate, exploring the “cloud curriculum” as part of the classroom curricula to understand semiotic demands and supports available to students. This cloud curriculum drew upon the Ontario Language programmatic curriculum only.

Following ethical approval by Western University and the sites’ respective governing bodies, (see Appendix A1 and J1), recruitment began. I recruited potential participants from the independent school (site one) by contacting the principal and administration of the school via email. The principal’s letter (see Appendix H1) had attached to it the letter of information and consent for potential teacher participants (see Appendix B1), which

was distributed via email. Both of these emails outlined the study, including inclusion criteria for study participants. Once I received confirmation of the teacher participant, I met with the teacher participant to obtain informed consent where the letter of information (see Appendix B1) was explained. When all letters of consent/assent were retrieved (see Appendix B1, C1, D1, E1), I began my first visit at the school. Adult bystanders were also included in site one. These were adults who were in the classroom during data collection. These adult bystanders could consent to participate in the study with the understanding that they would not be the analytical focus. The adult bystanders were provided with a letter of information and consent (see Appendix F1 and G1). This continued throughout the study. Three adult bystanders at site one provided consent.

For site two, the principal investigator of the SSHRC funded study project: “21st-century literacies: research and development of a ‘cloud curriculum’” emailed (using publicly available addresses) potential participants for the study. This email (see Appendix M1) attached the letter of information and consent for parents/guardians (see Appendix L1). Participants chose how they wished to be contacted. Potential participants were identified through interaction and using snowball sampling.<sup>4</sup> In this study, the participants were then able to contact the research team if they wanted to participate. Letters of information and consent/assent were distributed and collected by members of the SSHRC research team before I joined the team (see Appendix K1, L1). There were no adult bystanders at this site. Boards of education recruitment sites were chosen for convenience. For example, the boards of education were chosen because work in the board reflected the project’s intention, namely literacy, virtual learning, and multiliteracies pedagogies.

For both sites, students, as members of the teacher participants’ classes were invited to take part in the study as part of a convenience sample (a sample which was used because

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<sup>4</sup> Snowball sampling identifies an initial participant whom “provide(s) the names of other actors. These actors may themselves open possibilities for an expanding web of contact” (Atkinson & Flint, 2004, p. 1044).



of its accessibility). Students of the teacher participants needed to consent to the study via an assent letter for site 1 (for those aged 7-12) as well as consent from their parent/guardian (attached to the letter of information, see Appendix C1, E1, and L1).

## 3.2 Data Collection

This study used “multiple data sources” (Baxter & Jack, 2008, p. 554) as it is “a hallmark of case study research...which also enhances data credibility” (Patton, 1990; Yin, 2003) (p. 554). This study therefore sought to “integrate” (p. 554) data to “facilitate reaching a holistic understanding of the phenomenon being studied” (p. 554). Data collected included observational data using a checklist of modes I identified during the instructional periods in the three disciplines (see Appendix I1). Data collected also included photographs of students’ multimodal texts, the instructional periods, and the literacy events, as well as photographs of artefacts (assessment examples used by educators), and time spent prior to data collection (“casing the joint”, see below). Additional data collected included audio-recordings of the instructional periods, interviews, and informal conversations with students (e.g., asking students what they were making). These sources were all “converged in the analysis process rather than handled individually...with each piece contributing to the...understanding of the whole phenomenon.” (p. 554). Therefore, the data collection process was multimodal, viewing instructional periods through multiple modes, and semiotic resources for data collection.

### 3.2.1 Casing the joint

The first step in data collection was casing the joint. This followed Dyson and Genishi’s (2005) notion of “case the joint” which I employed to “gain initial insights” (p. 25) about the research sites. This meant using time at the beginning of the study to understand how participants were situated within the research site. Therefore, the study initially amassed “basic information about space, time and people” (p. 21). An example of casing the joint included talking with the educators about the curriculum documents or resources they used and then retrieving the curricular documents they had mentioned to further understand how their decision making was based upon these resources. The purpose of retrieving these curriculum documents was to establish connections to data collected,

such as the “complex institutional and pedagogical meanings undergirding the teacher’s scheduling decisions” (Dyson & Genishi, 2005, p. 23).

Dyson and Genishi (2005) also advised researchers need to be cognizant of how participants view them and their activities. Dyson and Genishi point out “until the researcher engages regularly with that world (the classroom), s(/he) won’t know the nature and boundaries of her(his) role” (p. 51). Therefore, the time spent prior to data collection not only provided me as the researcher an opportunity to retrieve documents pertinent to the study, but it also allowed me to become accustomed to my role as a participant observer in the bounded space of the classroom where I was given time to access the environment by the participants (following the ethics protocol).

### 3.2.2 Ethnographic tools

The study employed ethnographic tools for data collection. Traditionally, ethnography has three characteristics:

- 1) data should be drawn from ‘real world’ contexts;
- 2) both participant (emic) and researcher (etic) perspectives should be valued; and
- 3) meanings emerge in social and cultural contexts from the interwovenness of language, bodily movements, artefacts, images and technologies. (Flewitt, 2011, p. 296)

These characteristics of contextual meaning making and the meanings that may emerge across resources can likewise be found across social semiotics, multimodal literacy and pedagogy, and case study methodology. I used ethnographic tools as part of the data collection process by recording any event which I identified as an integral literacy event. A literacy event in this study was any instance where students were provided learning opportunities related to multimodal literacy within the classroom curricula. Heath (1982) defined a literacy event as “any occasion in which a piece of writing is integral to the nature of participants’ interactions and their interpretive processes” (p. 93). Within this study, the definition has been expanded to include multimodal texts rather than writing only. For example, this meant on occasion identifying, consented/assented children who consistently created literacy events together (either choosing to work together, or as a

result of predetermined small groups), shared discourses, or were (at that moment), creating multimodal ensembles, or drawing on semiotic resources. These forms of identification provided opportunities to identify literacy events and key “learning opportunities” for observation. Identifying focal children was “opportunistic” (Heydon, Moffat, & Iannacci, 2015, p. 180) in the sense that the practice focused the data collection process; it also allowed me to explore reoccurring semiotic choices that students made within these literacy events.

### 3.2.3 Curriculum document analysis

The educators in both sites were mandated to use the Ontario programmatic curriculum. Therefore, the study included a curriculum document analysis of the programmatic curriculum that corresponded to the classroom curricula I observed. In site one, this was Language (OME, 2006), Mathematics (OME, 2005) and Social Studies (OME, 2013a). In site two this was Language (OME, 2006). I used the analysis to understand the relationship between the semiotic demands of the programmatic and classroom curricula. As such, the programmatic curricula used were those outlined by the Ontario Ministry of Education.

In Canada, each province and territory is responsible for the legislation and operationalization of their education system. Educators are mandated to teach the programmatic curriculum provided in publicly funded schools. The curriculum document analysis was therefore conducted in part because it was an essential component to understanding the classroom curriculum I was observing (in that the teacher participants were required to incorporate the Ontario provincial objectives within their classroom curriculum). The curriculum document analysis was also employed in part because of the need to triangulate with the other data sources.

Overall, in the analysis I sought to discover: 1. What types of mandates are made available to educators through the programmatic curriculum to help incorporate multimodal literacy pedagogy in the classroom curriculum? and 2. What modes were used in each of disciplines? Therefore, the curriculum document analysis was used to determine not only what was expected or assessed in each grade, in that it is an outcomes

based curriculum reported through standardized report cards, but it was also used to determine what types of knowledge are officially valued.

I employed Bowen's (2009) methodology to conduct the curriculum document analysis. Bowen described the document analysis methodology as "particularly applicable to qualitative case studies" (p. 29). The analysis provided a means "to verify findings or corroborate evidence from other sources" (p. 30), while creating "supplementary research data" (p. 30) that could be triangulated with the multimodal analysis (Jewitt, 2009). The analysis entailed identifying and organizing major themes represented in the literature review, as well as the terminology that stemmed from the theoretical framework.

### 3.2.4 Observational data

To collect observational data, I sat at the back of the classroom whenever possible. Sitting at the back of the classroom allowed me to maintain participant observation and to ensure that I was not a distraction. Participant observation is defined as the "process enabling researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities" (Kawulich, 2005, n.p.). Therefore, when and if students asked questions, I answered, as outlined in their letter of assent (see Appendix E1). When students were completing activities, I stood behind the tables, collecting observational data (e.g., pictures, the multimodal checklist- see Appendix II). If asking students what they were making or doing, I bent down or sat next to them briefly to hear responses. I focused on not only how resources were situated within the students' space, but also how they explained their knowledge production (e.g., how an educator introduced a digital tablet to students versus why they chose to use a specific colour or font). I conducted member checking during these interactions, where I paraphrased what the students were saying to check if I understood what they had told me.

Likewise, I interacted with the educators to decide when I should start and finish to assist observing a literacy event. The educators, as the participants with access to classroom knowledge about opportunities for literacy events (e.g., via scheduling disciplines) were asked to identify when they would like the researcher to observe "learning opportunities"

(e.g., at a specific time of day, when a new lesson was started, when students presented their assignments, for summative assessment).

The multimodal checklist (see Appendix II) and artefacts were used for observation to “permit the discernment of patterns of multimodal texts used for instruction and assessment purposes” (Boatright & Wilson, 2011, pp. 10-11). The checklist was used to consider how “semiotic resources are constantly in a process of change” (Jewitt, 2009, p. 29) within disciplines used as well. Therefore, I used the modal use checklist to track modal usage and modal supports provided in the classroom curriculum. The modal checklist detailed the class makeup of the discipline observed (e.g., whole class, small group, or one-on-one). This modal checklist detailed modes used during this period as well as if the modes were used for assessment or instruction, if the educator provided explicit support for the modes, if the modes were a required modal construction, or if the student constructed it.

### 3.2.5 Photography

I photographed literacy events, modal ensembles students were creating, as well as visual representations that the educator provided students. The photographs were intended to document multiple viewpoints of the literacy event including but not limited to the adult and child participants, the modes and resources involved, and the actions being used by participants to compose multimodally. Chaffee, Lynn-Luehmann, and Henderson (2016) suggest photography relays the complementary practices (or lenses as they call it) of “multimodality and ethnography” (p. 422). These authors described how the multimodal approach “conceptualizes photographs as one of many semiotic resources that researchers draw on to make meaning and produce findings within the situated contexts of research sites” (p. 422). Photographs enabled a configuration of the site by “drawing attention to the relationships among material entities (e.g., space, positionality, color, gesture, gaze) (Kress, 2010, 2011)” (p. 422).

This study employed Pink’s (2003) approach to discern photographs as outlined in Chaffee et al. (2016), combining the multimodal with the ethnographic to understand how photographs produced in this environment render various information for the events

under study. I understood that “images cannot be separated from the interpretations given to them by different individuals in different contexts, because the meaning of photographs depends on who does the looking” (p. 424). However, there was also an understanding that in using photography, I, as the researcher, was solely determining not only what or when to photograph, but also how to photograph (i.e., the angle, the space). I understood that photography as a data source was embedded with a specific vantage point. As Chaffee et al. explain, photographs are formed from their uses, thereby creating meaning affordances and constraints. To mediate my vantage point, I followed Pink’s (2003) suggestion, that photographs are considered across “four foci: “(a) the context in which the image was produced; (b) the content of the image; (c) the contexts in, and subjectivities through, which images are viewed; and (d) the materiality and agency of images (187)”” (p. 424).

### 3.2.6 Interviews

I conducted interviews, which were all audio recorded, with a myriad of participants. Conferencing with students (i.e., informal interviews where I asked students to tell me about the multimodal text they were producing) allowed me to compare modal constructions with semiotic demands placed on students. The audio recordings with educators were used to understand “why (they) selected particular representations for instruction and assessment” (Boatright & Wilson, 2011, p. 11). I audio recorded the public school board educator during informal conversations following the end of the lesson. Topics discussed included how the educator envisioned using the ‘cloud’ curriculum, assessment building, and the cross curricular implementation of multimodal pedagogy in the cloud curriculum. I conducted three semi-structured (Drever, 1995) interactional interviews with the independent school educator (see Appendix II) during the research period. I used these interviews to understand if the educator was aware of the semiotic demands placed on students. Discussion topics included the educator’s teaching experiences, knowledge of multimodal pedagogy and semiotics, its use in assessment, and during the instructional period. Over the course of three interviews, an interactional conversation emerged where the teacher participant discussed how their understandings of the terms multimodal and semiotics had changed, drawing on lesson

examples I had observed. I was able to discuss ways in which multimodal pedagogy could be implemented and provided examples. In interviews two and three, the educator was asked to build upon how her understandings of the terms had changed via our conversations- both informal and during the interview period. Interview questions focused on how the educator works towards assisting students in constructing knowledge from the curriculum. Each interview was transcribed.

### 3.2.7 Audio recordings

In both sites, audio recording the instructional period allowed me to identify multimodal instructions amidst the affordances and constraints that students were provided for the assessment or activity period. Sometimes, in the independent school, the instructional period activity consisted of the entire class. While other times, the instructional period consisted of smaller groups as a result of timetabling or students working with activity centers. In the public school classroom, audio recordings always captured the entire class (except in the case of student absences) of literacy events occurring in the instructional and activity period. I transcribed literacy events from the audio recordings which illustrated multimodal pedagogy in practice, the use of modes connected between the instruction and assessment period, as defined within the literature review. These transcriptions, along with the photographs and curriculum document analysis, were displayed against one another using multimodal analysis to create findings for chapter five and six (see appendix I1).

### 3.2.8 Transcription

While I received advice from the teacher participants about which literacy events to watch (in terms of when they began and ended), I also chose events to transcribe which I thought indicated multimodal opportunities based upon my experiences as a researcher as well as the literature reviewed. I determined which events were salient to the study, indicating my subjective voice.

However, there are consequences to transcribing. As Kress (2011) explained, the use of transcription already “suggests a move across from one mode to another, usually to writing: from speech to writing” (p. 255). While traversing across various modes in

multiple layers may present, as Kress suggested, “ontological and epistemological consequences” (p. 255), “every mode has its ‘meta-mode and, in that, it has the potentials for developing means that fulfill what transcription had traditionally been used to do” (p. 255).

### 3.3 Data Analysis

Data from each case were analyzed through multimodal analysis (Jewitt, 2009) and compared to the theoretical framework, and literature review to draw conclusions for the study. The comparison was used to highlight the importance for educators to “explicitly teach (students) about the affordances of various modes in a given discipline” (Boatright & Wilson, 2011, p. 31) to create an inclusive classroom where students may be able to explicitly relate their linguistic and cultural experiences to their meaning making from the curriculum used “in the most apt and powerful ways possible” (p. 31). I analysed the classroom curricula literacy events, as the focus of observation, using multimodal analysis (Jewitt, 2009). This study analysed which modes were used in these events, where they were taking place in the events (in which disciplines), and which demands they placed on students and pedagogies. The analysis also explored whether there were supports during the day for students to meet demands placed on them.

I utilized multimodal analysis. Multimodal analysis provides the means to “test, explore and illustrate ideas about how multimodal communication works” (O’Halloran & Smith, n.d., p. 7) by addressing “issues arising from the consideration of semiotic resources other than language, in interaction with each other and with language- such as gesture, gaze, proxemics, dress, visual and aural art” (p. 1). Multimodal analysis analyses communication in all its forms and contexts by displaying the different types of data collected (in this case from a particular literacy event) side by side (e.g., transcription and photo). This analysis connected to the ethnographic tools employed “using ethnographic methods and techniques during fieldwork” (Flewitt, 2011, p. 296) as data collected was analysed “within the situated contexts of broader social and cultural framings” (p. 296). For example, I compared photographs and audio recordings to understand the connection between semiotic demands and multimodal pedagogy. This comparison also considered how this connection was situated within the educators’ and students’ broader social and



cultural experiences. I combined ethnographic tools with social semiotics and multimodality to consider how modes are configured in social and contextual processes of a dynamic classroom.

From a methodological consideration, multimodal analysis converges with ethnography, social semiotics, and case study methodology. Similar to how ethnography considers “culture as text” (Flewitt, 2011, p. 293), social semiotic theory views “text as an instantiation of culture and social situation” (p. 293). “The process of social meaning making” (p. 295), where meaning is seen as built upon the social and cultural spheres surrounding the text, is arguably the key component of how ethnography and multimodality intersect, as examined by Flewitt. Thus, for example, the physical classroom space where the interactions occurred were/are upheld and reinforced by how society has constructed these modal affordances, which are provided to students by educators. Thus, “qualities of modes...are determined partly by the materiality of the medium, and partly by how that medium is used within a particular culture” (p. 295). The research study also sought to understand the motivations, or the intentions behind “why teachers and learners choose to use particular modes at particular times in particular ways in particular social contexts” (p. 295).

Multimodal analysis intersects with case study methodology when data sources are “converged in the analysis process rather than handled individually” (Baxter & Jack, 2008, p. 554). The authors suggested the integration of data sources illustrate multiple viewpoints and this “convergence” “promote(s) a greater understanding of the case” (p. 554). Multimodal analysis is also concerned with the interaction between two or more semiotic resources or modes to illuminate a text’s communicative functions. I used multimodal analysis to examine student constructions as related to semiotic demands placed on students during the instruction period. For example, multimodal analysis enabled the contrast of audio recordings to photographs retrieved during the literacy event. This analysis may be biased because I as the researcher determines the data to display beside one another to represent the literacy event. This form of analysis provides opportunities to consider an event from multiple perspectives.

The integration of the theoretical frameworks with multimodal analysis integrated social semiotic multimodal analysis within this research study. Social semiotic multimodal analysis focuses on “mapping how modal resources are used by people in a given community/social context” (Jewitt, 2009, p. 29). Therefore, data collected were examined for “choices people make (from the resources available to them) and the non-arbitrary and motivated character of the relationship between language and social context” (p. 30). I considered multimodal discourse analysis to analyse all interviews to observe how semiotic resources are “configured to design interpersonal meaning” (p. 28). Multimodal transcription (Jewitt, 2009) was used (Appendix I1) to view literacy events through multiple elements (e.g., photos and transcription) to create multiple viewpoints of an event.

Once transcribed, I organized interview data according to frequently emerging themes like curriculum and pedagogical practices. Data within these themes was qualitatively coded according to frequently emerging words to develop "a composite description" (Creswell, 1998, p. 58) of each case. Results from each case were used in chapter 7 to develop recommendations for a multimodal framework that can help elementary educators consider semiotic practices as part of their everyday pedagogical practices.

To analyze the curriculum documents, I followed Bowen’s (2009) three steps: “skimming (superficial examination), reading (thorough examination), and interpretation” (p. 32). I used the themes from the literature review within the curriculum document analysis, enabling a “more focused re-reading and review of the data” (p. 32). Moreover, both an automatic (search function) and manual (re-reading) analysis was conducted. I used the find function to search for the modal terms (see chapter four). This document analysis was used to determine the extent to which semiotic and multimodal supports were already in place for educators to draw upon when constructing their lessons.

### 3.4 Trustworthiness

To establish trustworthiness, I used a condensed version of Shenton’s (2004) summary of Lincoln and Guba’s framework. Trustworthiness was established through the four postulates of credibility (of the findings), transferability (of the findings to other

contexts), dependability (“that the findings are consistent and could be repeated” [Cohen & Crabtree, 2006, Evaluative Criteria section, para. 1]), and confirmability (to what extent findings “are shaped by the respondents and not researcher bias” [Evaluative Criteria section, para. 1]).

I also followed Baxter and Jack’s (2008) trustworthiness framework as it connects to case study methodology. Baxter and Jack suggested there are five components the researcher has “a responsibility to ensure” (p. 556) including that the

research question is clearly written, propositions (if appropriate to the case study type) are provided, and the question is substantiated; (b) case study design is appropriate for the research question; (c) purposeful sampling strategies appropriate for case study have been applied; (d) data are collected and managed systematically; and (e) the data are analyzed correctly (Russell, Gregory, Ploeg, DiCenso, & Guyatt, 2005). (p. 556)

In addition to the research question being written clearly, I stored all data collected on an institutional management system according to date collected and data type. For classroom one, data was as well organized according to discipline. Baxter and Jack (2008), suggested a management system that provides a means to deal with “overwhelming amounts of data” (p. 554). It is argued this type of system “improves the reliability of the case study as it enables the researcher to track and organize data sources” (p. 554). This meant data was retrieved and analyzed correctly through multimodal analysis where “triangulation of data sources” (p. 556) was used to “enhance data quality based on the principles of idea convergence and the confirmation of findings (Knafl & Breitmayer, 1989)” (p. 556) such as of the curriculum document analysis, audio recordings, and observational data collected was used in order for the two cases to “be viewed and explored from multiple perspectives” (p. 556).

The time I spent in the research setting was also based within case study methodology. I spent two months in classroom one and three months in classroom two, for up to two hours for each visit. I went to each classroom once or twice a week during the school day in each of the two classrooms. This time frame was used to examine how interactions and modalities were affected by time, space, subjects, and the classroom makeup (as described in chapters 5 and 6). I decided the length of time to spend in each classroom

with the educator based upon their previous teaching engagements and commitments. The timeframe adhered to Kawulich's (2005) claim that "prolonged interaction with the community enables the researcher to have more opportunities to observe and participate in a variety of activities over time" (para. 44). Sustained interaction is likewise supported in case study methodology literature. Baxter and Jack (2008) explained "prolonged or intense exposure" (p. 556) provides opportunities to establish "rapport with participants (to) be established so that multiple perspectives can be collected and understood" (p. 556).

The following four paragraphs explore Shenton's (2004) four postulates to account for interactions in the classroom, and the amount of time spent in the research setting.

Credibility was established through an extended period of time, so participants grew accustomed to the presence of the researcher in the field. "Persistent observation" (Cohen & Crabtree, 2006, Evaluative Criteria section, para. 1) was used where the most relevant issues were focused on in detail. Lincoln and Guba (1985) explained, "if prolonged engagement provides scope, persistent observation provides depth" (p. 304). According to Shenton (2004), the most important factor to establishing credibility for Lincoln and Guba was creating "explicit...member checks" (p. 72). As such, throughout the study, I employed "respondent validation" (Stoecker & Brydon-Miller, 2013, p. 24). Baxter and Jack (2008) describe this process as one "where the researchers' interpretations of the data are shared with the participants, and the participants have the opportunity to discuss and clarify the interpretation" (p. 556). For example, I rephrased what the participant said in the interview to determine if I understood what was being discussed. I also read notes that I took about what the student was making back to the student to check if the meaning was as intended.

Highly detailed descriptions allowed me to plan for the conditions for transferability: how the findings may be transferred to new scenarios or environments. I used detailed writing to better evaluate and draw conclusions to develop recommendations as outlined in chapter 7. As explained by Shenton (2004), "detailed description in this area can be an important provision for promoting credibility as it helps to convey the actual situations

that have been investigated and, to an extent, the contexts that surround them” (p. 69). Thus, I collected data on how many participants were involved and how long I spent collecting data. I also wrote about for example, the classroom layout, and the resources available to educators or students. These types of detailed descriptions enabled me to discern how the variations amongst the classroom impacted the results. This allowed me to determine what types of recommendations could and could not be applicable for various educational stakeholders.

Credibility and dependability form a symbiotic relationship according to Shenton, where a discussion of “the processes within the study” would potentially permit “a future researcher to repeat the work” (Shenton, 2004, p. 71). The study therefore included information about “the research design and its implementation” (p. 71) as well as information about data collection in chapter three.

Finally, confirmability was established through an audit trail where I ensure that all the data complied with ethics committee rules (e.g., I stored interview transcripts, audio recordings in the management system). These four steps were used with triangulation of data to ensure “findings (were) the result of the experiences and ideas of the informants, rather than the characteristics and preferences of the researcher” (Shenton, 2004, p. 72).

### 3.5 Positionality

The study’s purpose was to generate new knowledge gleaned from what was happening in the cases. This meant, (for the purposes of my role as the researcher), I observed what was happening in these classrooms without interfering with the day-to-day scheduling of the classroom. Entitled naturalistic observation, Pierce explained this role as one which aim(ed)s to conduct research “without any attempt to intervene- (where) the situation is not manipulated or controlled by the investigator” (Pierce, 2015, Observation Without Intervention section, para. 1). Therefore, I did not instigate questions except for asking students “what they (were) making”. Due to classroom’s dynamic nature, I acted as a participant observer as well (as previously discussed) using ethnographic tools. That is, I

participate(d) in the group activities as desired...yet the main role of the researcher in this stance (was) to collect data, and the group being studied is

aware of the researcher's observation activities. (Kawulich, 2005, The Stances of the Observer section, para. 4)

Participant observation is historically an ethnographic qualitative method used “to help researchers learn the perspectives held by study populations” (Duke University, 2015, p. 13). Participant observation was used when I collected data from elementary classrooms as “Participant observation always takes place in community settings in locations believed to have some relevance to the research questions” (p. 13). Thus, I recorded modal opportunities, including their description, analysis, and the settings they were performed in as they were. While recording, I tried not to influence their description through my own bias. However, I recognize that “the way in which we see and respond to a situation, and how we interpret what we see, will bear our own signature” (Nesbit, 2013, p. 119). Thus, I acknowledge my own subjectivity throughout the research process.

## Chapter 4

### 4 Document Analysis

This chapter examines the programmatic curriculum document analysis I conducted (see Doyle, 1992). The chapter examines how the Ontario programmatic curriculum's overall and specific objectives attended to semiotic issues in content and assessment. Education in Canada is mandated provincially and territorially. Therefore, educators at Ontario's public school boards are mandated to use the Ontario provincial programmatic curriculum. As such, this document analysis and the classroom data examined the modal frequencies found within the programmatic documents (Language [OME, 2006], Mathematics [OME, 2005], Social Studies [OME, 2013a]) to determine the types of modal supports already available to the educators.

#### 4.1 Context: Disciplines and Assessment

This study was conducted in Ontario, Canada. Detailed below is the purpose and definitions associated with the three disciplines the study explored as they are outlined in the Ontario programmatic curriculum documents Language (OME, 2006), Mathematics (OME, 2005), and Social Studies (OME, 2013a). Each of the documents are organized according to grade with different specific and overall expectations for grades one through eight. These specific and overall expectations indicate knowledge and understanding students should have when they complete that grade.

These expectations are subsequently divided into strands which cover specific content areas. For example, in the Language document, there are specific and overall expectations for oral literacy, reading, writing, and media literacy. In the Mathematics document, expectations are divided into number sense and numeration, measurement, geometry and spatial sense, patterning and algebra, and data management and probability. Social Studies, which is only taught from grades one through six,<sup>5</sup> has two strands:

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<sup>5</sup> The Social Studies (OME, 2013a) curriculum is for grades 1-6. History and Geography is for grades 7 and 8. However, these disciplines are combined into one document. For more information, including the

heritage and identity, and people and environments. Each document also includes information about the overall disciplinary aims in terms of knowledge, understanding, and skills students may develop. I first explain each discipline's aim to contextualize the three documents, and then I provide an in-depth analysis of the specific and overall objectives for each grade under study (grades one and five). Since the grade five classroom involved collecting data from the Language discipline only, grade five expectations are presented from the Language document only, rather than the Mathematics and Social Studies document explored for the grade 1 classroom.

The Social Studies (OME, 2013a) curriculum document emphasized students “becom(ing) responsible, active citizens within the diverse communities to which they belong” (p. 6). The document mandates that students are involved “in aspects of communication” using an “inquiry process” and “student’s learning style and strengths” (p. 23) where they “develop the ability to use the ‘concepts of disciplinary thinking’ to investigate issues, events, and developments” (p. 6) in each grade. The document focuses on developing disciplinary thinking. This thinking is responsive to student experiences and interests, similar to multimodal pedagogy as outlined by Stein and Newfield (2007).

Likewise, various types of literacy are outlined as integral to the discipline. It is written within the document “students develop a wide range of literacy, mathematical literacy, and inquiry skills” (p. 48). Developing “literacy skills” (p. 48) includes exploring various modes. For example, the written mode (NLG, 1996) is included using “reading” or “analysing various texts” (p. 48). It is written students will “use language with care and precision to communicate effectively” (p. 48). Therefore, there is a need to examine how children are supported to meet semiotic demands placed on them to determine how they may be provided opportunities to create meaningful multimodal texts.

In comparison, the Mathematics (2005) document is framed within a “problem-solving context” (p. 12). The overall and specific objectives require students to develop a



mathematical metalanguage through the use of representations. For example, “including the use of mathematical symbols and terms” (p. 12) to develop “the symbolic language of mathematics” (p. 12). Mathematical literacy in this document is thus framed within being literate in mathematical representations (e.g., symbols). In the Mathematics curriculum, students were/are assessed in terms of how they communicate mathematical knowledge, which included “The conveying of meaning through various oral, written, and visual forms” (p. 20). In comparison, the Social Studies (OME, 2013a) and Language (2006) provide a definition including “The conveying of meaning through various forms” (OME, 2006, p.21; OME, 2013a, p. 32). Documenting instances of modal expectations in the programmatic curricula is thus necessary to determine if the multimodal pedagogy being employed by the educators (the classroom curricula) is similarly reflected (endorsed) in the programmatic curricula. How these representations are designed means the need to consider the modes being provided to students within the classroom curricula.

The Language (2006) document detailed that it “is based upon the belief that literacy is critical to responsible and productive citizenship, and that all students can become literate” (p. 4). Language as a discipline is considered cross-curricular, although the document was established “to provide students with the knowledge and skills that they need” (p. 4) for literacy. There are principles which are foundational to this document, which described what “Successful language learners” (p. 4) were able to demonstrate. For example, that students are able to “make meaningful connections between themselves, what they encounter in texts, and the world around them” (p. 4).

Literacy within this document is also defined outside of traditional definitions, as it is “about more than reading or writing- it is about how we communicate in society” (UNESCO, Statement for the United Nations Literacy Decade, 2003–2012 as cited by Ontario Ministry of Education, 2006, p. 3). Like social semiotics (Halliday, 1978), language development was/is considered to be “about social practices and relationships, about knowledge, language and culture” (OME, 2006, p. 3). How students explore literacy, was offered through multiple avenues- “listening and speaking, reading, writing, and viewing and representing” (OME, 2006, p. 3). These various forms of literacy may

be considered modes, which may suggest the curriculum document advocates for student awareness of the many forms language takes, like Mathematics (OME, 2005). Due to this potential advocacy, exploring multimodal pedagogy becomes fundamentally important, to understand how students can develop a multimodal literacy facility within these disciplines.

The media literacy strand within the Language document lent itself to multimodal pedagogy explicitly, requiring educators to provide modal opportunities to students.

Expectations within this strand focused on students

1. understanding...a variety of media texts;
2. Identify(ing) some media forms and explain(ing) how the conventions and techniques associated with them are used to create meaning;
3. Creat(ing) a variety of media texts for different purposes and audiences...
4. Reflect(ing) on and identify(ing) their strengths, areas for improvement, and the strategies they found most helpful in understanding and creating media texts. (OME, 2006, p. 14)

Here, students were invited to comprehend as well as design media texts to “create meaning” (p. 14), explicitly. This section outlined what can count for literacy is dependent upon the strand expectations. A “Media text” considered “the construction of meaning through the combination of several media “languages”- images, sounds, graphics, and words” (p. 14), which this study calls modes. In this particular area of Language, designing texts and exploring their modal meaning and affordances was a key feature of this strand. Thus, this strand provided/s examples of the ideas and foundations behind multimodal literacy. It was here where perhaps one of the most direct examples of multimodal literacy development was evident.

## 4.2 Modal Frequencies

I defined modal frequencies within this analysis as the number of times a modal term appeared in each of the three curriculum documents. To do so, I used the search function throughout the document. I searched for modal terms as outlined by Cope and Kalantzis (2009), which was developed from the NLG (1996) designs of meaning. The terms included: Oral, Audio, Visual, Gestural, Written, Linguistic, Tactile, Spatial, Multimodal. This terminology was used as 1) these texts outline theory used within the theoretical

framework and 2) these texts follow in sequential order to see how modal terminology has changed. These spellings determined the extent this document adhered to traditional modal terms. However, I used alternative terms (e.g., Writ(e/ing/ten) to show that I considered that multimodal concepts may be included without adhering to theoretical terminology. Keeping with the organization of each document, which saw different specific and overall objectives for each grade, I recorded modal frequencies as well for grade one and grade five separately (see tables 4.1- 4.4).

**Table 4.1. Modal Frequency- Entire Document**

Modes	Language	Mathematics	Social Studies
Oral	206	25	16
Audio	5	1	2
Visual	87	31	28
Gestural	0	0	2
Written	50	16	23
Linguistic	5	1	5
Tactile	0	1	0
Spatial	0	26* <sup>6</sup>	127
Multimodal	0	0	0

<sup>6</sup> This refers only to the spatial sense strand title found throughout the document. No specific or overall objectives comprised the word spatial.

**Table 4.2. Modal Frequency- Entire Document (Alternative Spellings)**

Modes	Language	Mathematics	Social Studies
Oral	206	25	16
Audio	5	0	2
Visual	87	31	28
Gestur/e/al	13	0	2
Writ/e/ten/ing	460	44	35
Linguistic	5	1	5
Tactile	0	1	0
Spatial	0	26*	127
Multimodal	0	0	0

**Table 4.3. Modal Frequency- Grade 1 Overall and Specific Objectives**

Modes	Language	Mathematics	Social Studies
Oral	15	0	1
Audio	0	0	0
Visual	9	0	0
Gesture	1	0	0
Writ/ten/ing	43	1	0
Linguistic	0	0	0
Tactile	0	0	0
Spatial	0	1	6* <sup>7</sup>
Multimodal	0	0	0

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<sup>7</sup> This frequency is found only as a heading for “spatial skills”.

**Table 4.4. Modal Frequency- Grade 5 Overall and Specific Objectives**

Modes	Language
Oral	19
Audio	0
Visual	6
Gesture	1
Writ/ten/ing	32
Linguistic	0
Tactile	0
Spatial	0
Multimodal	0

Modal frequency counts for the entire curriculum document suggested there was a modal disparity between disciplines in terms of the modes students and educators were expected to use to represent their meaning making. The frequency of modal opportunities was far greater in some disciplines than others. For example, the Language document focused on Oral modes, with 206 instances, whereas the oral mode was found 25 times in the Mathematics, and 16 times in the Social Studies document. Instead, the modal emphasis for Social Studies was placed in the spatial category in 127 separate instances while the Mathematics document suggested an emphasis on the visual mode. However, once I considered alternative spellings, the Written mode in the Language and Mathematics document was the most frequently occurring. While it was still spatial for Social Studies, due to the emphasis on spatial skills throughout the document, the written mode was the second most occurring.

Modal frequencies between grade 1 and grade 5 specific and overall expectations change in terms of frequency, but not in terms of modal type. For example, in grade 1, there are 15 instances of the term oral, whereas there are 19 in grade five. In grade one, there are 43 instances of the written mode, yet 32 in grade 5. The modes most frequently cited and least cited remains the same in both grades: written was the most, then oral, and gesture as the least (exclusive of any mode not cited).

### 4.3 Document Analysis

The above descriptions sought to contextualize the document analysis exploring the purpose and definitions of the three disciplines, in addition to looking at the frequency of modes (oral, audio, visual, gestural, written, linguistic, tactile, spatial, and multimodal) found in each of the programmatic curriculum documents for the elementary classroom (i.e, OME, 2005; OME, 2006; OME, 2013a, see tables 4.1- 4.4).

The following section contextualizes the study by exploring how theoretical terms outlined in the theoretical framework and literature review were/are supported in the documents the educators used (i.e., the programmatic curricula). I used this analysis to understand how concepts such as multimodal pedagogy, semiotic resources, affordances and constraints were potentially understood by educators, within this study. As such, I explored key terms from the literature review to examine evidence of multimodal pedagogy in each of the grades observed (grade 1 and 5).

#### 4.3.1 Representative words

I chose and subsequently searched for key words from the literature review in each of the curriculum documents. The endings were removed to get as many responses as possible. For example, to look for words such as “representation”, “representing”, and “represent”, the word “repre-” was used. Similarly, to look for “meaningful” and “meanings”, “mean-” was used. The full list of words searched for included “repre-”, “symbol-”, “mean-”, “construct-”, “design-”, “multi-”, and “mod-”. The words searched touched on various aspects of the curriculum document including assessment, instructional strategies, and student activities.

#### 4.3.1.1 Grade 1: Language (OME, 2006).

To begin, it must be noted the word “multi-” and “design-” were not found within the overall and explicit expectations for grade one. Similarly, the term “mod-” yielded only terms connected to model/led rather than mode. As well, the term “symbol” was mentioned only within the context of “sound-symbol relationships” (OME, 2006, p. 43), as a “text feature”, as well as a way to describe multimodal texts that include “pictures, symbols, and words” (p. 43).

The Language document (OME, 2006) contained the other terms, “repre-”, “symbol-”, “mean-”, “construct-” in the specific and overall expectations for grade 1. These terms illustrated implicit examples of multimodal pedagogy. For example, the search term “mean-” yielded objectives requiring students to explore connections between modal affordances and meaning making, taking into consideration, in some instances, culture. For instance, the media literacy overall expectation asked students to explain “how the conventions and techniques associated with (media forms) are used to create meaning” (p. 45). Similarly, students were required to use various oral modal elements to “help communicate their meaning (e.g., increase volume to emphasize important points...)” (p. 37). They had to use written modal elements such as “grammar” (p. 44) and “punctuation” (p. 43) to convey meaning, and verbal modal elements “including facial expression, gestures, and eye contact...to help convey their meaning” (p. 38). Finally, they had to use aural elements such as “listening comprehension strategies...to clarify the meaning of oral texts” (p. 50). Whereas these expectations call on students to consider their own meaning making, the document does not detail how to mediate this meaning that is being created and conveyed across instruction and assessment (i.e., semiotic demands). The term “construc-” again supported this position by asking students to “construct meaning” (p. 39). Likewise, the term “repre-” ask students more explicitly to consider multimodal communication where they are ask to explore “alternative perspectives” (p. 40) using various modes such as “drawings, paintings, or models to represent the perspective of different characters in a text” (p. 40). Each of these terms provide evidence students are asked to communicate using modes; however, how they develop this literacy must still be explored.



When I re-read the document myself, the document indicated multimodal pedagogy is inclusive throughout. For example, texts are defined for the entire document as multimodal texts that are “a means of communication that uses words, graphics, sounds, and/or images, in print, oral, visual, or electronic form, to present information and ideas to an audience.” (OME, 2006, p. 159). Likewise, “successful language learners” include those whom are able to “make meaningful connections between themselves, what they encounter in texts, and the world around them” (p. 4). The achievement chart, the rubric provided which indicates the four areas students are assessed in, application, communication, thinking, knowledge and understanding, likewise acknowledged students are to be assessed in their ability to “convey...meaning through various forms” and gain “Subject-specific content...and the comprehension of its meaning and significance” (p. 20).

However, it is also noted with the expectations for grade one that specific modal affordances are applied to these forms. For example, “use stated and implied information and ideas in oral texts” (p. 36), as well as “using simple graphic organizers” to “identify and order main ideas” (p. 42). Arguably, for grade one, objectives are more generalized, where students are asked to “demonstrate an understanding of a variety of media texts” (p. 45) and are asked to “use a range of strategies to construct meaning” (p. 11). At the end of grade one, students are required to consider representation. For example, make connections between “high frequency words and words of personal interest or significance” (p. 40) through various forms like how words looks different in “personal writing” vs. “a variety of fonts” (p. 40). Here, it is evident Language has begun to build on modal representations that while implicitly, will most likely expand in later years to allow students opportunities to expand on their multimodal literacy, consider affordances and constraints so that they can design, and make meaning with purpose.

Educators are also asked to explore with students how modes may interact with one another. For example, educator prompts included “How do you learn new words that you can use when you are speaking?” “What words have you learned in the books you are reading that help you understand what you hear or that you can use while you are speaking?” (p. 38). Therefore, it is not clear whether all modal affordances would be

valued for meaning making within this document as specific expectations are provided for some modes and not others.

#### 4.3.1.2 Grade 1: Mathematics (OME, 2005).

In the Mathematics (2005) document, meaning making is attributed to context. A primary theme throughout the document is providing “concrete” or non-abstract ideas. In accordance with the specific and overall expectations for grade one, “multi-” and “model-” did not return any search results. The term “repre-” in mathematics is attributed to the concrete theme of the document, where students are asked to complete specific expectations using resources to represent these understandings such as “5 counters (to) represent the number 5” (p. 33) or “describe(ing) common two-dimensional shapes...using concrete materials and pictorial representations” (p. 37). Using discipline-specific representations is exemplified with the term “design”, “symbol-”, and “construct-” as well where mathematical tools are used to depict “a picture of a flower” (p. 37), “construct(ing)...tools for measuring lengths, heights, and distances in non-standard units” (p. 35), and “creat(ing) basic representations of simple mathematical ideas (e.g., using...invented symbols)” (p. 32).

The term “mean-”as well was attributed to concrete contexts. For example, “meaningful contexts” (OME, 2005, p. 33) were used to “read and print in words whole numbers to ten” (p. 33). In the Mathematics document, representing was/is seen through making concrete connections to provide modal opportunities. For example, using manipulatives or kinaesthetic movement “such as hopping or clapping” (p. 32) or graphic representations such as “pictures...diagrams; invented symbols” (p. 32) to represent content material or “mathematical ideas” (p. 32) to “make connections among them, and apply them to solve problems” (p. 32). Within these examples, educators are provided specific examples for the ways in which students can represent their meaning making, and thus, specific modal affordances educators are provided.

A manual re-reading of the document indicated the document as well contextualizes meaning making, like multimodal pedagogy, considering student knowledge, understanding, and interest. Educators are asked to

draw on students' prior knowledge, capture their interest, and encourage meaningful practice both inside and outside the classroom. Students' interest will be engaged when they are able to see the connections between the mathematical concepts they are learning and their application in the world around them and in real-life situations. (OME, 2005, p. 25)

However, unlike multimodal literacy pedagogy, there may be some mis-matches between modes used for representation and for communication. For example, students are asked to “represent a given repeating pattern in a variety of ways (e.g., pictures, actions, colours, sounds, numbers, letters)” (p. 39). At the same time, expectations to be achieved by the end of grade one include being able to “identify and describe common two dimensional shapes” (p. 37) as well as being able to “sort and classify them by their attributes (e.g., colour; size; texture; number of sides), using concrete materials and pictorial representations” (p. 37). In these instances, students are called on to complete two separate tasks: organize according to attributes and choose appropriate materials or pictures for their representations. However, how students are supported through this decision making is not included in the description. Similarly, how students are to successfully represent through each of these ways is not described. While students learn about math through multiple avenues, they may therefore be required to explain what they have learned through other modes. This suggests students may not be supported in the semiotic demands placed on them. While there may be many instances where students are able to use modes to explore content area, the affordances and constraints are not necessarily brought forth to establish multimodal pedagogy or literacy.

Meaning making throughout the Mathematics document (OME, 2005) was included to help students develop their understanding of the content material. Educators were/are encouraged to provide “meaningful problem solving experiences” (p. 12) for students and communication was defined as achievable

through various oral, written, and visual forms (e.g., providing explanations of reasoning or justification of results orally or in writing; communicating mathematical ideas and solutions in writing, using numbers and algebraic symbols, and visually, using pictures, diagrams, charts, tables, graphs, and concrete materials). (p. 20)

Here, students are provided opportunities to communicate through various forms specifically through oral, written, and visual forms. It is not explicit whether it is possible to explore these modal forms with one another through these representations. This suggests either specific modal affordances are valued within this discipline, or other modal opportunities are not considered of value to either the discipline, or as what is to be considered mathematical language or literacy. Likewise, for educators, it is requested they

use of a variety of instructional strategies (e.g., extensive use of visual cues, manipulatives, pictures, diagrams, graphic organizers; attention to the clarity of instructions; modelling of preferred ways of working in mathematics; previewing of textbooks; pre-teaching of key specialized vocabulary; encouragement of peer tutoring and class discussion; strategic use of students' first languages). (p. 28)

Whereas these forms describe the ways in which students are asked to communicate, it is not certain if there are connections between the expressive and receptive meaning making expectations. In comparison, in the Mathematics curriculum document, symbols are taught in terms of the non-arbitrary symbols which consist as part of mathematical language (i.e.,  $f(x)$  as a marking for a mathematical function or cm as a symbol of measurement). The curriculum document claims these must be “taught explicitly” in order “to enable (students) to use the symbolic language of mathematics” (p. 12). The Mathematics document attributes meaning making opportunities to this discipline. However, it is not certain whether semiotic demands for students and educators may be connected nor is it certain how modal affordances and constraints are valued.

#### 4.3.1.3 Grade 1: Social studies (OME, 2013a).

The specific and overall expectations of the Social Studies document indicated the term “mean-” and “design” were not presented. The term “repre-” was evidenced once where students were asked to consider how they could “represent...patterns” (OME, 2013a, p. 67); however, discipline specific examples of modal representations were not presented in this expectation. The term “construct-” was evident throughout the document. Expectations included “constructing maps” (p. 66), “constructing simple maps” (p. 72), or “constructing and using pictographs” (p. 67). Within these expectations, students were asked to use modal elements attributed to these formations such as using various

“elements of maps” (p. 66) or “using a variety of tools (e.g., plot their data on a pictograph or chart) (p. 70). More explicitly, students were asked to “demonstrate an understanding of the basic elements of a map (e.g.,...symbols in the legend...scale, and colour)” (p. 73). These elements indicated students are asked to explore modal affordances as coalesced within the construction of maps. However, these elements also bring to the forefront that elements such as symbols and colours are localized according to the particular map or particular theme the students are exploring. Therefore, to meet semiotic demands, it is arguably imperative that there are explicit supports provided by the educator within these elements.

There are more explicit examples of these connections within the document. For example, the term “symbol-” indicated students are asked to show various elements of maps using symbols such as “the location of the play, picnic, and walking areas in a local park” (p. 73). Multimodal literacy pedagogy factors in because educators are asked to help students demonstrate representation. Moreover, these representations are connected to student experience and understandings where students are asked to examine “the interrelationship between people and significant natural and built features in their community” (p. 72), and educators are asked to use guiding questions to assist students in understanding specific modal affordances within these constructions such as “Let’s look at these old and new pictures of this area of town. What do you see that’s different? Are there more trees?” (p. 70). Thus, within this document, there are explicit connections to multimodal literacy pedagogy elements; however, it implies educator involvement to make connections for semiotic demands.

Social Studies used situated teachings for modal opportunities and was concerned with developing various types of literacies. For example, “spatial literacy” (OME, 2013a, p. 24) where students “develop and communicate a sense of place” (p. 24) via their “map, globe, and graphing skills” (p. 24) as way to make meaning. Similarly, students develop “critical literacy” (p. 51) and its skills via their own assessments to “form an opinion” (p. 51) that is rationalized, and considers bias, looking to “evaluate the text’s complete meaning” (p. 51). These skills are developed through content thinking and the objectives laid out throughout the document. These types of literacies may speak to specific

considerations of meaning making. The literacies may also explore the affordances and constraints of the resources they are using (e.g., in order for a student to be critically literate, [OME, 2013a] claims students need to be aware of “points of view...the context...the background of the person interacting with the text...intertextuality...gaps in the text...and silences in the text” [p. 51]). Likewise, representations in terms of meaning making are as well considered from a design point of view, where students are expected to work within the modal affordances through the texts they are exploring.

Students are required

to use a variety of strategies to construct meaning, choosing strategies appropriate to the particular text form. They need to understand vocabulary and terminology that are unique to social studies... and need to acquire the skills necessary to interpret various kinds of graphic depictions (e.g., maps, infographics, graphs, and charts). (p. 49)

To do so, educators are tasked with helping students to

develop their reading skills and strategies...(or use) works of fiction that can be used to illustrate key concepts in social studies...(using an assignment of) fictional works (to) model concepts from the social studies...curriculum in order to provide opportunities for meaningful discussion about both current and past issues. (p. 49)

While these strategies are grounded in providing conceptual frameworks, namely past and current issues, and using familial understandings, how students should work within strategies to construct the meaning rather than to just understand it, multimodal literacy expectations may be absent when considering how students should use strategies to construct meaning rather than just understand it. This document highlighted elements of multimodal pedagogy where students are required to develop their literacy skills by bringing in student and community identity. However, connections between modal affordances and constraints for constructions within this discipline is done implicitly.

#### 4.3.1.4 Grade 5: Language (OME, 2006).

Key terms identified throughout the grade five overall and specific expectations implicitly indicated the multimodal processes outlined in the literature review. For example, the term “repre-” was developed in the overall and specific objectives of the

Language curriculum. Overall expectations for the junior grades (4-6) included being able to represent meaning making: “knowledge and skills in...representing to understand, critically analyse, and communicate a broad range of information and ideas from and about their multicultural, multimedia environment” (OME, 2006, p. 77). Similarly, it included the ability to develop representational skills “in listening, speaking, reading, viewing, and representing” (e.g., p. 102) to look at how this skill can develop specific technical skills. For example, specific objectives include determining how representing skills assist with development of “oral communication skills” (p. 96) where students use, for example, “role play” (p. 98) as a way to create representations of particular characters, people of interest, within the context they are exploring. Or, how these skills help with “development as writers” (p. 102). There are likewise expectations which enable students to develop their representing skills. For example, determining persons that are underrepresented in a “documentary” (p.104) so “the text (could) be changed to include that point of view” (p. 104). Looking at more specific interpretations of representing, the term symbol occurs twice in the grade 5 expectations, in the case of “sound-symbol relationships” (p. 101), and “schwa symbol” (p.101).

Meaning is a key component within the grade 5 expectations. Language pedagogy for the junior grades is designed with the expectation students will “engage...in meaningful interactions with a wide variety of texts” (p. 77), seeking “beyond the literal meaning of texts” (p. 77), where reflection includes looking at how they “construct meaning and communicate successfully” (p. 77), and how to “communicate...intended meaning” (p. 102). For example, “clarify(ing) the meaning of oral texts” (p. 94), is achieved by exploring modes in “themes in an oral text” (p. 94) or “summarizing and synthesizing ideas to deepen understanding of the themes in an oral text” (p. 94) or asking clarifying questions like “I wonder what was meant by” (p. 94).

Modes are also used as a way to look at how they “contribute to meaning” (OME, 2006, p. 95) and support other modes. For example, using “vocal effects, including tone, pace, pitch...and use(ing) them appropriately and with sensitivity towards cultural differences to help communicate their meaning” (p. 95), or, using resources like “dictionaries to clarify word meanings” (p. 97). Students are expected to “construct meanings” (p. 97)

and work through modes using “cues” to “predict meaning” (p. 99) as well as “recognize a variety of text forms, text features, and stylistic elements and demonstrate understanding of how they help communicate meaning” (p. 97). As can be seen within these expectations, modal affordances are a key component of meaning, where students are expected to “analyse texts and explain how various elements in them contribute to meaning (e.g., narrative: character development, plot development, mood, theme; report: introduction, body, conclusion)” (p. 98), or “analyse a variety of text forms and explain how their particular characteristics help communicate meaning, with a focus on literary texts” (p. 98). However, with terms like “intended meaning” (p.102), in terms of using “parts of speech corrected to communicate” (p. 102), the question arises in terms of the extent students are taught what this intended and representational meaning looks like and the extent students are provided opportunities to expand their multimodal literacy, mainly through an exploration of modal affordances and constraints.

“Construct-” as a term was evident throughout the objectives for grade five. It was used to build meaning (e.g., “ideas in texts to make inferences and construct meaning” [p. 97] or to use “a range of strategies to construct meaning” [p. 97] via an understanding of various texts), as well as character education. For example, “respond(ing) constructively to ideas expressed by others” (p. 94) or “work(ing) constructively in groups” (p. 95). Educators are therefore provided opportunities to help students construct investigations. For example, educators may ask students to “construct meaning in meaning texts” (OME, 2006, p. 103) through a prompt like “what are the overt and implied messages conveyed by this T-shirt, which displays the logo of a popular rock band?” (p. 103).

Certain words used within the document analysis were only seen once including design, multi, and model. Design as a term was evident within the context of what grade 5 students should be able to show by the end of the year in terms of a text being produced to a particular audience (e.g., “designed to appeal to younger girls” [p.103]). Multi was only seen within the context of “multimedia sources” (p.100) once. Model was only seen in a scaffolding sense, where “learning strategies (were) modelled by the teacher during think-alouds” (p. 94). Thus, modal ensembles are evident within the grade five expectations, where modal affordances are provided; however, the expressive meaning



making expectations are implicitly implied via the ways in which meaning is to be constructed.

## Chapter 5

### 5 Findings: Classroom One

This chapter presents findings in response to the research questions. These questions focused on the types of semiotic demands that students encountered across three disciplines (language, mathematics, and social studies). The study also examined the types of instructional supports that students received. The primary study questions were:

1. What types of semiotic demands are placed on elementary aged students across the classroom curriculum?
2. What instructional supports are provided for students to meet these demands and with what implications for their communication?

The chapter also explores the following sub-question:

- B.* What modes do educators use in their classroom curriculum?

Social semiotics, examined in chapter two, explores meaning making within social constructs. To situate meanings (or results made) from the study, chapter five begins with a description of the first grade classroom: how it was set up, educational philosophies employed by the educator, the classroom schedule, and classroom resources available to educator and students. This description is followed by findings from the interview with the teacher participant, which concerned her thoughts on multimodality, multimodal literacy, and semiotics. The remaining portion of this chapter provides examples of multimodal literacy learning opportunities across the three disciplines, presented through multimodal analysis.

#### 5.1 The Classroom Contextualized

As I described in chapter 3, I entered the field by implementing Dyson and Genishi's (2005) notion of "casing the joint". This meant I paid attention, in part, to the classroom space in terms of how participants made meaning and how the classroom resources were used to determine which semiotic demands were placed on students. Thus, the study's

preliminary focus included examining resources available to students as well as how the spatial layout of the classroom would impact how group collaborations were constructed.

The grade one classroom was part of an association of independent schools in Canada. This independent school didn't belong to the public system governed and funded by the province. As such, the school charged tuition fees for students (scholarships and financial aid available). The school adopted a Reggio Emilia approach, as its institutional curriculum, which focused on student-led learning. Students had access to multiple physical resources, to potentially express their meaning making and understandings with their peers and the educator. However, the classroom drew on the Ontario programmatic curriculum as the educator explained in the interview.

Central to the Reggio Emilia<sup>8</sup> approach is the idea of 'hundred languages', a term which defines "a highly democratic approach to meaning-making, recognizing and valuing multiple forms of communication beyond language" (Cowan, 2015, p. 11). In Reggio classrooms, students are presented with material opportunities to "work through" (p. 2). For example, "natural materials (clay, wire, paint, light)...as well as 'digital languages' (Scuola Comunale Dell'Infanzia Diana, 2012)" (p. 2). The Reggio classroom utilizes an "emergent (continuously developing) curriculum" (Schroeder- Yu, 2008, p. 128) which involves the meaning making of the students, and the context of the classroom curriculum (Hočevar, Šebart, & Štefanc, 2013). Likewise, various multimodal texts (such as documentation) by the educator are used to consider "what directions to pursue" (p. 128).

Semiotic pedagogical processes are exemplified with the Reggio process of documentation. The presence of this within this classroom, is described within this chapter. Student meaning making or their "learning process" (McNally & Slutsky, 2017, p. 1929) is continuously documented using questioning, "participant observation...on-going dialogue with others" to "inform practice" or "improve and enrich planned experiences" (p. 1929). Documentation types may include "samples of a child's

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<sup>8</sup> This term was created by the founder of the Reggio Emilia schools, Loris Malaguzzi.

work...photographs...comments written by the teacher...transcriptions of the child's discussions...and comments made by parents" (Schroeder-Yu, 2008, p. 127).

It is important to note that scholars (e.g., Cowan, 2015) have examined fundamental differences "between Reggio Emilia and multimodality" (p. 13). For example, that "the term 'language' in 'hundred languages' is at odds with a multimodal approach" (p. 13) because language is decentralized and "conceptualizing modes as 'languages' might be considered (as) limiting" (p. 13, see educator interview, chapter 5).

The classroom was large enough to house a living green wall, a salmon hatchery, and various resources such as wooden building blocks, iPads, and Apple computers. Due to its size, the classroom was sometimes split into two separate classrooms using a divider. Sometimes, half of the class (approximately ten students) participated in another discipline taught by another educator while the teacher participant taught the other half of the class. The classroom I viewed also used a cross curricular approach. While Mathematics and Language each had their own instructional period, they were combined at times, such as during calendar time. Similarly, Social Studies and Science were both covered during the "Investigative Research" instructional period.

Upon entering the classroom, a carpeted seating area could be seen to the left (see figure 5.1) with labelled reading and portfolio bins for student access. Manipulatives were abundant in the classroom. High on the wall was a pottery word wall made in a previous year. Below were various posters, photographs, and transcriptions of what students had learned or made. The educator's desk and the living green wall were to the right of the classroom entrance. A constant sound of water trickling through each plant could be heard throughout the classroom.



**Figure 5.1. Carpeted area with labelled bins.**

A whiteboard area was in front of these spaces. This is the area where most lessons took place. Specific content areas, were indicated with various items, such as a number chart, that were on the whiteboard. Padded trapezoid shaped benches formed a semi-circle around the whiteboard for students to sit at. Wobbly stools (stool with a base that was not flat) were wedged between two separate benches for students to use (see figure 5.2). These stools throughout my time within the classroom were alternatively used as a prop, table, and seating option. The space between the benches and the whiteboard was carpeted. Behind this area was circular desks for students to use during the activity portion of the lesson.



**Figure 5.2. Seating area.**

An additional seating area, where there was a couch, was visible if one is facing the whiteboard. This area is not visible in the photo above. This space contained a couple of computers, a tank filled with plants, and an aquarium that could house animals used for an investigative research project. In addition, various resources in bins could be found here, like wooden building blocks, tree branches, an abacus, a table with a light underneath, and buttons. This space had large windows that filled the classroom with natural light. In the back corner was a salmon hatchery, tools for students to use that they labeled themselves (e.g., markers, pencil crayons, see figure 5.3), and a sink. If one were to move through the classroom divider, an additional couch and carpeted area, a circular table, and chairs could be found, which students occasionally occupied during whole class lessons to complete their activities.



**Figure 5.3. Student made labels for markers.**

## 5.2 Interview: The Modal Supports Available in the Classroom Curricula

I chose “Catherine” as the educator’s pseudonym for site one. The pseudonym appears in instances of transcriptions, including the interview below.

During the analysis phase, I organized the interview into themes of experiences: those of the educator, of multiliteracies, the curriculum, and the culture of the educator or students. It was important to consider social context when mapping interview responses, which is why the pedagogical functioning of the classroom took such a central role in the analysis. From these general themes, frequently emerging words were used to uncover results that related to the study, such as semiotic demands, frameworks, modal affordances, curriculum, and multimodal. From these terms, three broad themes emerged from the analysis including educational philosophy, resources, and assessment.

### 5.2.1 Catherine: Her understandings, definitions, and beliefs as related to the classroom curricula

Catherine had been teaching at the school for seventeen years. She had the opportunity to teach junior as well as primary grades- everything from “JK...to grade six, except for grade two” (Interview 1). Catherine used her collective teaching experiences and her understanding of the Reggio-based approach to dissect interview terms, such as semiotics, multimodal, and mode. For example, she understood the term multimodal as akin to differentiated instruction. That is,

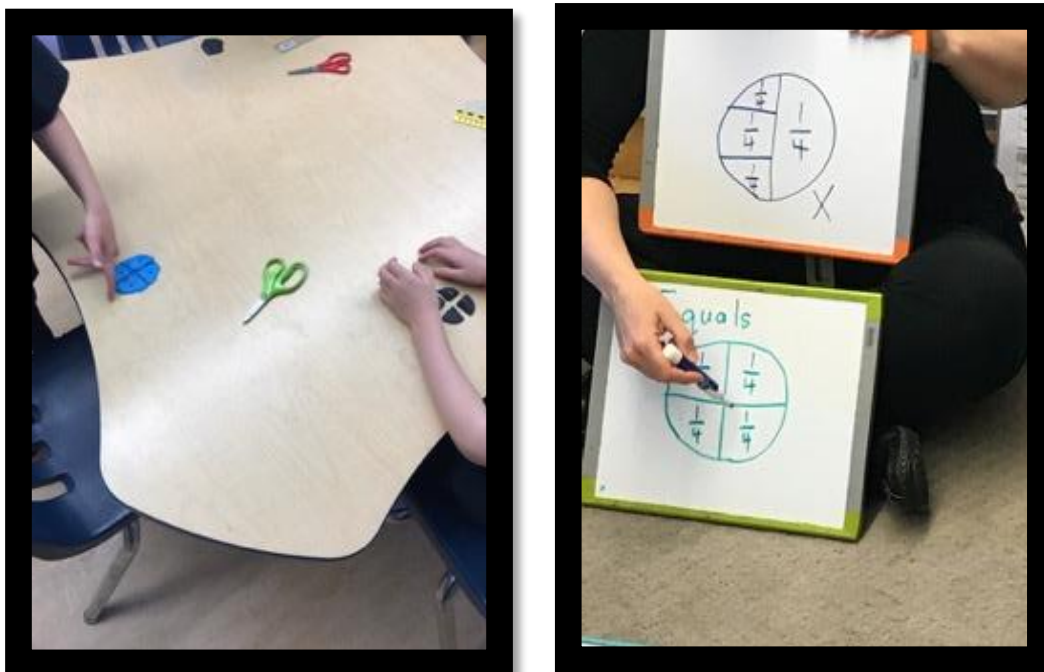
there are multiple ways of learning and so, there are multiple ways of connecting with kids...some kids will be direct instruction...and other kids it will be inquiry based. And so, it just depends on what best suits that particular child. (Interview 1)

Catherine referenced a key component of the Reggio approach of “the hundred languages, being the big piece that is part of that pedagogy and making sure that [she] kept reliving it” (Interview 3), and used this approach to dissect the definitions I discussed. For example, I defined multimodal, which I described as when “we combined modes” (Interview 1). To explain how she understood this term, Catherine gave an example of when the “tower garden came in big boxes, all disassembled” (Interview 1). The students had to hypothesize “what they thought it would do” (Interview 1) via drawings and writing, and then they verbally explained it. Catherine thus saw the development of modal opportunities as “the responsibility as a teacher...to make sure that you’re exposing kids to a variety of different pieces” (Interview 2).



The above definition and understanding was similar to Catherine’s understanding of modes, which allowed students to articulate their knowledge in various ways. Catherine discussed her understanding of modes where students that could draw really well and had that image in their mind would be able to put it on the paper but not necessarily have the words to be able to talk about it: “So, ...I think that’s why you need to make sure that you’ve got different modes of expressing what they are thinking” (Interview 2). Essentially, modes for Catherine were “mak(ing) sure you have a variety of different ways that you’re connecting with the kids....them having their voices, making sure that there are a variety of different ways for them” (Interview 1). An example Catherine provided was that some students were “not able to articulate what equal parts of a whole are, but them showing with that piece of plasticene...you can see whether they understand it or not” (Interview 2) (see figure 5. 4). Students were invited to unearth concepts associated with fractions, such as what equivalent pieces look like, using tactile, visual, and textual representations. According to Catherine, the types of responses that could be unearthed from using various modes was dependent on the child and “what they were most comfortable with” (Interview 1), which worked according to what they were “articulate” (Interview 1) in. Often, Catherine seemed very perceptive in terms of her modal usage.





**Figure 5.4. Working through misconceptions with plasticene.**

Catherine expressed that it was important to help students grow in the modal areas where they were not so strong. For example, “set(ing) up a scenario, or stage or whatever for them to be more verbal” for “those kids that are very strong with, with the hands-on piece” (Interview 2). Catherine was able to verbalize multimodal connections, such as how she suggested they “observe the plants growing here,...to observe the salmon hatchery...to use our observational, our eyes and our listening and our hearing, and not jump right into books” (Interview 2). Catherine expressed this as a way to “open up the possibilities for them and then later down the road perhaps choose how they want to communicate something” (Interview 2). Catherine’s definitions and understandings provided the foundation for examining how semiotic demands developed through the themes below, in accordance with modes, and how they were assessed.

### 5.2.2 Catherine's construction of her classroom curricula via her understanding of the Reggio Emilia Philosophy

Catherine constructed her classroom curricula through the Reggio Emilia approach. Catherine connected the approach to a discussion of modal affordances and constraints constructed within the grade one classroom. She also connected the approach to how students explored curricular material from a multimodal platform. Catherine explained that she didn't wish to provide extensive instructional supports or specific modal affordances and constraints for fear this would limit student potential. For example, Catherine did not like the term "assessment" (Interview 1) and did not wish to create "success criteria" (Interview 1) because she seemed to believe that this would limit students in terms of where they could go.

The focus instead was investigative where children could discover things for themselves. For example, in Investigative Research (Social Studies), Catherine explained that "we do map out all the possibilities that we can think of. And then often we come to the classroom and say ok, what are your questions? Where, what are you thinking about this?" (Interview 1). As Catherine described "I don't necessarily have lesson plans...I have like, possibilities" (Interview 1). This purposeful reflection of frameworks was supported within the school as well, where all teachers would "meet as a whole team" (Interview 1) to make sure they each reflected the "big ideas" (Interview 1). This stemmed from, as Catherine explained, "years ago (going) through the Science curriculum and the Social Studies curriculum" (Interview 1) to identify "a big idea" which "evolved over time so that there's a social and emotional part, the self-awareness part as well" (Interview 1). This "inquiry based" framework, which was considered, to "be quite responsive" (Interview 1) was "the philosophy of the school as well, that we're inquiry based and that we're quite responsive in terms of that." (Interview 1).

Catherine connected modal affordances to contextual ideas, having students create modal affordances that they developed themselves. Catherine explained that the investigative research portion (Social Studies and Science) was connected to "critical thinking" (Interview 1) where students looked at an idea from multiple vantage points or meaning making opportunities. While Catherine suggested that "we don't always think about kids

in grade one being able to be critical and analyze things and make judgements about things” (Interview 1), using modal opportunities helped with this.

Catherine provided examples of how modal opportunities were connected with the curriculum expectations in grade 1. For example, Catherine explained that “the writing...the actual physical written form, (was used for) organization of [the student’s] sort of reasons why this book or this particular item was their favourite” (Interview 1). Likewise, Catherine explained that students were provided with more explicit examples of modal affordances, such as “they’ll have to (have) periods at the end, capitals at that beginning of sentences” (Interview 1). However, these expectations were still connected to student criteria. For example, “cycles” (Interview 1), that is the exploration of what a cycle was, involved students coming up “with a criteria” (Interview 1) to determine if an example could be considered or defined as such. So students would explore by “Reading it, understanding it, and then being able to communicate back...What it is” (Interview 1) so that they “underst(ood) that it’s not, you’re not just gathering information just for yourself, but you’re actually gathering information to share with everybody else” (Interview 1).

Modal affordances were also embedded within social semiotic aspects of the classroom curriculum. Catherine explained that she would take students “to the art studio” (Interview 1) where they could “go walk around” (interview 1) to consider what they were “inspired by” (interview 1). She reconnected the idea of modal affordances to having resources available for students by explaining that for art it could just be “having materials in the classroom, to think about all those art materials. That they can do water colour, that they can take it out...having that readily available” (interview 1). Materials being readily available allowed Catherine to create modal opportunities more organically than she had planned:

so I can’t pre-plan everything, but...but in the mode as well, I’m thinking as I’m going and thinking ok well, oh, this might be an opportune time to pull out the microscopes and have a look at the iPads, I may have, I really try and think about all the different possibilities, and then in the moment see what might be the particular piece. (Interview 1)

Essentially, this meant Catherine looked at “being responsive, but also being open, and also thinking about the possibilities to be ahead of time. Like I can’t just go, oh well, we’ll see what happens.” (Interview 1)

Catherine chose modal affordances in accordance with the Reggio approach. I asked Catherine to explain a specific example where she “taught...that type of multimedia as (she) explain(ed) it reflected” (Interview 1) to which Catherine responded: “So there’s block centers, there’s drama, there’s light centre...there’s also a math centre. So each of those will sort of cater to the student interest to make sure the engagement is there because they’re creating their own” (Interview 1). Catherine extended this definition to explore the multiple avenues to explore a given topic. Catherine explained that in grade one, they had three big ideas. One of these, cycles, enabled students, for example, to “look at the human life cycle, they could be really interested (in) animals, or they could be thinking of cycles in terms of time, or seasons, or something like that” (Interview 1).

Later, Catherine attached the modes that students would use here. For example, the students “creat(ed) their own fluid dance related...to how the water cycle went” with “a student teacher” (Interview 1). These types of examples seemed to be consistently connected to Catherine’s “experience with...Reggio Emilio pedagogy...based on a hundred languages” (Interview 2) where using “a hundred languages...you’re thinking about kids...how they think and interpret and understand the world, through many different languages. And not just languages like English, French, like art, artistically or musically or any of those possibilities” (Interview 2). What was important was constructing spaces where students had opportunities to explore ideas through multiple avenues; however, the extent to which opportunities were presented and planned to provide to students to become multimodally *literate* was still left to be determined.

Catherine also explained how she looked to balance “implicit and explicit instruction” (Interview 2) within the “word study groups” (Interview 1). Students were asked to understand how certain words may be grouped into particular families, and yet, Catherine explained that she “tr(ied) to ask them, so they come to that conclusion” (Interview 2).

Therefore, semiotic demands placed on students in these cases were done by balancing inquiry based learning and curricular requirements. As Catherine explained,

we have to make sure that they are constructing it for themselves and then afterwards, maybe coming back and being explicit. I really truly believe that they have to construct it for themselves first...before we do the explicit part. And then you can emphasize. (Interview 2)

Along the same lines of balancing the explicit with the implicit, Catherine explained how she mitigated expectations from the programmatic as well as classroom curriculum:

In terms of math, obviously I'm bound to the Ontario curriculum...so I have to cover things but it still can be through the inquiry lens. So I can still present something to them and say what do you think about that? Or do you have theories about that? So, it's not always me saying this is the one way, the right way to do it. But, it's definitely making sure that the inquiry sort of questioning and and, and investigative and constructivism is involved in with what they do in the math. (Interview 1)

I asked Catherine how she saw that “teaching and assessment (could) be supportive to students in demands placed on them” (Interview 2). Her response was similarly led by a student-instigated framework. Catherine suggested that, for her assessment, she was looking “to see whether there’s growth” (Interview 2). Through this understanding, she was able to determine which areas needed support, or as Catherine described it, “Oh! There’s a huge misconception in this area so now I need to think about the next lesson and how that’s going to go because I have to address this” (Interview 2). This brought into question the function of modal affordances and constraints, mitigated with the curriculum, as well as the purpose of semiotic demands in this classroom.

### 5.2.3 Catherine’s construction of her classroom curricula via placed semiotic resources

Catherine placed semiotic resources throughout the classroom to provide students opportunities to work through various types of modes. Catherine provided specific examples of how she prepared modal resources to give design opportunities to students. She explained she had to “have the iPads ready, I have to know that I have the paint ready, I have to know that I have the paper ready if they’re going to be writing” (Interview 2).

Similarly, Catherine explained that she felt her job was to simply begin the exploration of resources, such as “creating that respect for the materials” (Interview 3) (in this explanation it was art materials). Catherine explained that her focus was not on students becoming multimodally literate through modal affordances. For example, when I asked Catherine about resources she used that helped her be explicit with students about their modal opportunities, Catherine replied that

So, I rely on the specialists in the building to help them to help my students also see it from many different perspectives. ‘Cause they have a really in depth knowledge in terms of that so, that would be one piece, and I think just transferring it, the idea that art is not just happening in the art studio, like actually art here is your observational drawings, can, if you work on that skill, can actually help you in your scientific understanding of something because you’re observing it, and you’re recording what you observe. So that, those two pieces complement each other in that way. (Interview 2)

While Catherine here articulated that she worked to contextualize modal resources, when asked if she discussed with students “how modes can help students understand what they’re learning about”, Catherine responded, “do I talk to them about the different modes that we’re doing? I’m not sure that I do” (Interview 2). Catherine explained that she understood modal opportunities through a communicative capacity where “If I just relied on oral communication, them being verbal, communicating that way, then I would never know the deep understandings that they’re gathering because I haven’t looked at the other ways that they’re looking at things” (Interview 2). For example, she described how in “grade six...(she) would focus a lot on the verbal and written” (Interview 1) and yet, when she moved to the primary grades realized “They can’t write, what do I do” (Interview 1), so she had to consider other modal opportunities for how they could “express themselves” (Interview 1). In the end, what was most important to Catherine was “just making sure that there’s a variety, that we’re making sure we’re exposing them to a variety throughout the year. But I don’t think I would explicitly, I don’t remember ever explicitly saying we’re going to use this” (Interview 2).

Catherine and I also shared an exchange about explicit versus implicit modal opportunities:

Catherine: So, but that they can come to that conclusion themselves I think is pretty amazing for all the stuff they can do.

Emma: I think that's really interesting because to me I see like when we can identify like the modes that we're asking kids to think (about) like to get to the flexible numbers,

Catherine: Right.

Emma: When they're developing that, even if we're not explicit with them, they're developing it so that they can show it. (Interview 3)

Catherine acknowledged that resources could present opportunities to appease semiotic demands. I asked, "if we're actually explicit with [students] about the modes that they're going to be using...how [Catherine] could see that being beneficial if, supporting them for the activity" (Interview 2). Catherine provided a Mathematics example where she described using the "ten frame and the math rack" (Interview 2) where she explained that she was "more explicit about saying things like this, once they've come to an understanding, [that] this, will help [the student] count more efficiently" (Interview 2). She went on to explain that in doing so

You don't have to count one by one by one by one you can count in a group, you know that that top row, or that whole thing, is a group of ten. You don't have to count. So that they start to unitize and that's a big piece for the primary to understand in math. So, for me I will be explicit and then I'll hear some of the other kids say you don't have to count one by one! You don't have to count one by one. So I see that because we were explicit about that, that we're looking to find efficient ways counting. If you count one by one by one it's not as efficient as grouping them into groups and that, and then for some of the other kids I will say you know, that's the beginning of, of a thinking about multiplication. Oh! Multiplication! Yes! That's the foundation for multiplication, thinking of things in groups of. But then I'll be explicit about why we're going to keep going with that sort of piece. So that would be an example there. (Interview 2)

From my understanding of Catherine's perspective resources were set within a fluid framework to implicitly work through the demands of the curriculum and the pedagogical frameworks, and thus, semiotic demands placed on students.



Catherine in some instances worked through semiotic demands with students explicitly. She gave me an example of this in relation to a class play that she was developing for the following week. The play contained multiple modalities. She explained that through this play, they would be “talking a lot” (Interview 2), that they had already “been doing plays in French, they...just filmed it out of the ravine” (Interview 2). And thus, she would be discussing with the students

how you get yourself in character...and when we're setting it up, because when we're reading, there's dialogue within the...books that we're reading...So, that you're talking about an exclamation mark, how you need to emphasize your voice, so, that sort of piece, is by doing the reading there, we're hoping that will transfer now to the plays that they're going to read. (Interview 2)

This led into a discussion about how Catherine was planning on “talk(ing) about writing a script and how...that's different and the structure of that” (Interview 2). Similar to Catherine's discussion of relying on special subject educators to explore modal affordances Catherine suggested she would do the same here. Thus, Catherine explained that she provided resources to children to instigate inquiry-based learning, and these were attached to multimodal composing. However, Catherine did not focus on making students multimodally literate across disciplines. Thus, the specific types of social semiotic demands placed on students, through a student-led curriculum, is still to be determined.

#### 5.2.4 Catherine's construction of her classroom curricula through assessment choices

Assessment to Catherine meant individual growth. Catherine used an inquiry based, student centered approach to her classroom curricula, which was directed by Reggio. As such, her assessment was built on this framework. Catherine explained that

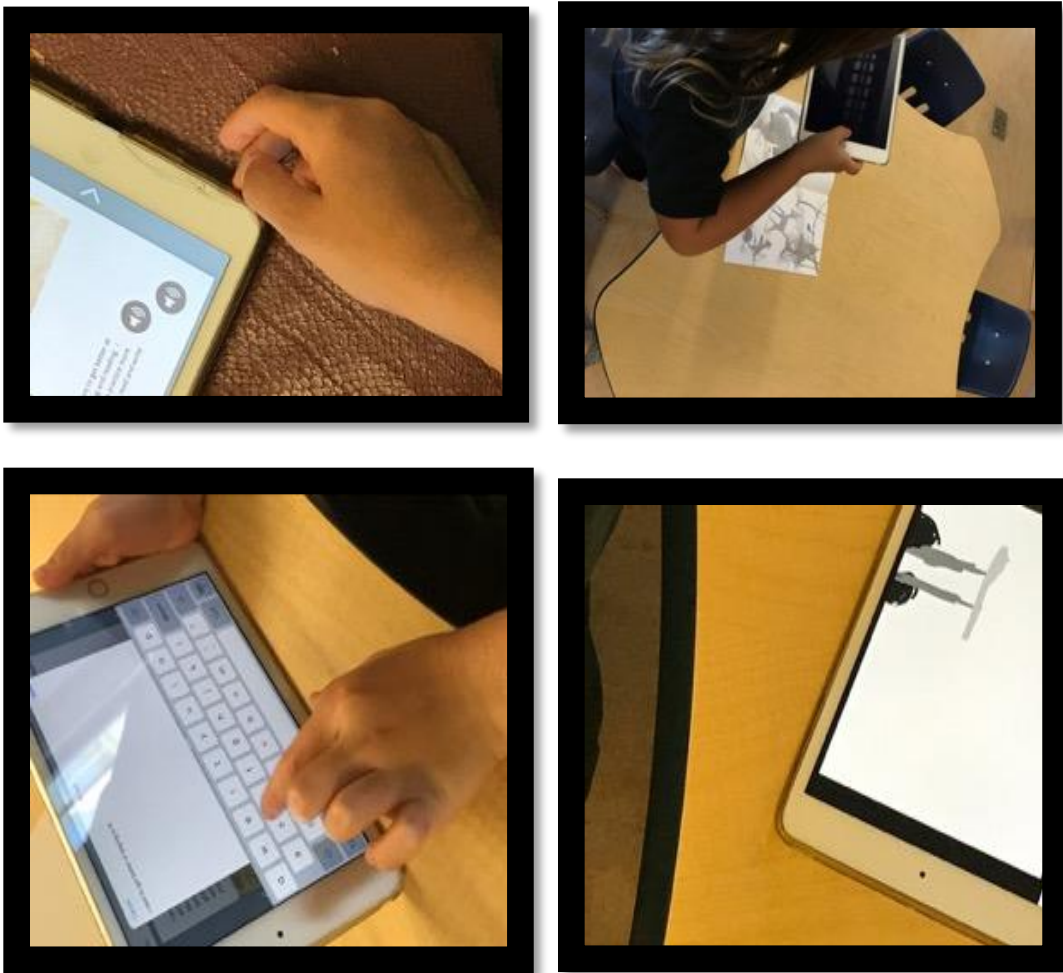
Reggio has been a huge influence. The image of the child, you're thinking about documentation. Documentation is not just documenting the words that they say but it's the pedagogy of listening. Like you're really listening to how the kids are saying it, what they're saying, and you're coming back and you're analyzing it, you're thinking about where they're going, and moving forwards. (Interview 3)

Catherine felt that “sometimes if we have a set success criteria that we as a teacher have said that this is what is expected, that sometimes, they’ll just go to that level, and they won’t push themselves beyond” (Interview 1). For example, Catherine explained that she had “taught older grades and I feel like that’s you gotta say here’s an example of a level four piece of work and then they won’t push themselves beyond because well I’ve got this, this, and this” (Interview 1). Catherine explained that while it may be possible to “pull out these exemplars” (Interview 1) to establish with students what a “level four” (Interview 1) looked like, she was “trying to move away from a level four, like I want them to just reach for as far as they can go” (Interview 1). For example, “seeing how complex we can get the word families” like “is there a silent e when...well I know because it’s a long o or a short o or whatever” (Interview 3).

The view of forgoing success criteria for student exploration was evident with the digital portfolios students were creating (see figure 5.6). Through these digital portfolios, students were given opportunities to be modal designers (see figures 5.5 and 5.6).



**Figure 5.5. Resources: iPads provided to students to create digital portfolios.**



**Figure 5.6. Designing multimodal ensembles: Auditory, text, and image.**

Catherine’s assessment aim for modal opportunities was that “they had that opportunity to figure out, make mistakes, learn from that sort of learning, like oh if I take a video, if I have my hand over the sound, then it’s not going to get the sound” (Interview 3). Thus, students created portfolios to display their learning and Catherine described this as “a student led portfolio...to show growth” (Interview 3). These portfolios emerged from other projects. Catherine explained how in the fall, the students “did a little mini project using ...book creator the app” (Interview 3) where they could “do audio...videos...text, photographs all within this and, it will save as PDF. And then, you have a digital book” (Interview 3). This evolved into “certain criteria, (where they) only did two things at the

very beginning...something that [they] (found) challenging, anything...and then another entry would be something that [they]’re proud of” (Interview 3). This was then performed again in the spring, where they tried answering these questions for a different class. As such, students were creating portfolios with criteria, but they were enabled to design through multiple modalities with the open-ended assessment criteria that they should show “growth” in their learning. Catherine explained that “for me it shows the power of reflection, most of them have gotten the idea that they should show growth” (Interview 3). However, it was not clear how these implicit demands could be assessed.

Catherine used informal conversations with the students to provide modal affordances which met these implicit demands. For example, Catherine explained

I think about the portfolios this morning, and perhaps we could have talked a little bit more about the videos, that’s- It’s funny to watch like some of them are like talk show hosts when they’re doing the videos, and I’m like, why would you do that? Why wouldn’t you just be your regular self? Why do you need to put on this piece because you’re explaining something you’re really interested about and very cool, and you’re taking it a little bit over the top ‘cause you’ve put on this extra personality which isn’t you, so. So, you have a few of those little conversations with some of them. (Interview 3)

This sentiment continued throughout her discussions of assessment. She explained her focus with assessment as “our conversation is can you show that you’ve grown since the last time we’ve done this” (Interview 1). As such, using the curriculum: was not about “covering” (Interview 1) the expectations, but about “unearthing them” (Interview 1). Catherine reasoned that, without expectations, such as “you just have to have a period at the end for grade one” (Interview 1) students were able to “writ(e) like they’re in grade three” (Interview 1), so her

expectation (was) you’re going to write because you love writing and so you’re going to keep going and you’re going to push yourselves and I’m going to keep pushing you even if it doesn’t say grade one expectation is here. (Interview 1)

For Catherine, “it’s like there’s no ceiling. Like it’s, we go as far as we possibly can” (Interview 1). I was curious in terms of how the expectations, success criteria, fit into the overall lesson for the students, and therefore asked about this more explicitly. For Catherine, this varied to some extent, as she said that this is something “we have played

around with” (Interview 1). For example, in “Writer’s Workshop...a checklist sort of piece” (Interview 1). She explained that it would “be constructed with the class” (Interview 1) to which I member checked by rephrasing saying “So they take part in the assessment” (Interview 1) to which Catherine responded “Yes” (Interview 1). Catherine provided an example of co-created assessment where

for non-fiction you have to make sure there’s a table of contents ok, so that will go in to their checklist. Oh so now for sure we’re old enough now that we know we have to have periods at the end of sentences, so that we’ll go, oh for sure we know that the, I mean for the non-fiction that there’s a picture there that has to go with each. So they’ll co-co create. (Interview 1)

Thus, assessment in Catherine’s classroom reflected inquiry-based educational philosophy, as well as the modes used in the classroom.

When Catherine did discuss modal affordances in relation to assessment, she made connections to semiotic demands placed during the instructional portion of the lesson. As noted in the modal usage table, the oral modes were used most frequently. Similarly, Catherine used assessment to capture these opportunities. For example, Catherine explained how she took notes of student conversations via notes and transcription

So, I, ok, if it’s just an individual lesson, like for example the math, I take notes,...I quote kids exactly what they say, I write down any misconceptions they have, I write down if they’ve changed their, if they’re able to change their thinking from the beginning of the lesson to the end of the lesson. (Interview 1)

Catherine explained how these responses enabled her to assess if students had grown in their thinking, a key aspect of what she was looking for in her assessment. Catherine also used “photographs sometimes, videos” (Interview 1). What she considered to be her “kind of big assessment” was “taking notes” as “In grade one we do not do tests” (Interview 1). Therefore, Catherine employed multiple modes within her assessment.

Catherine also engaged one-on-one with students via conferencing (see figure 5.7), again using speech for formative assessment:

I don’t do tests. It’s on the spot, what are they thinking about. For investigative research, I’ll ask them the first theory about what structure is, and then after we’ve gone through multiple experiences, I’ll ask them again what structure

means to them as the big idea and you can see the growth with that, it's incredible...to see the growth, and how they're able to articulate it or if they've got more vocabulary or more terminology, or they've got many more experiences to relate to the different things. (Interview 1)

Catherine also used other assessment types like individual interviews “about what their understanding is,...get(ing) them to draw what their understanding is, and then I'll get them to write what their understanding is. So, in trying to make sure there's multiple different ways” (Interview 2). Catherine also used problem-solving scenarios to determine from a “diagnostic sort of understanding” (Interview 2) the extent to which students were currently understanding content knowledge.



**Figure 5.7. Conferencing with students.**

Catherine did on occasion use standardized assessment (see figure 5.8), or “paper pencil assessment” (Interview 2) where the goal was not “to get a certain mark but...to see growth” (Interview 2). This seemed to be relegated to Language and Mathematics of

disciplines I viewed. She explained that “writing is a little more directed” so Catherine would “sort of have a trajectory of where [she] want(ed) them to go with their reading” (Interview 2). For example, she employed “the Ontario Writing Assessment” (Interview 2), “spelling inventories” (Interview 1), “Fountas and Pinnell” (Interview 2), “number knowledge test” (Interview 2), and the resulting “reproducibles” (Interview 2) from these

because this is what we pass from teacher to teacher as years go on...So that they can look at that and kind of assess where (we) can see examples...they're set so every almost every grade does OWA, almost every grade some some sort of math assessment, every grade does the reading” (Interview 2).

Catherine did mention that the students were “sometimes less engaged, in this sort of assessment” (Interview 2). As well, she found that while

assessment of observation and listening is a bit more subjective like you sometimes...influence the interpretation that you make of it...with the reading assessments...it's a one-time thing. I find the richer pieces are from observing and having the conversations, and listening and recording those pieces, and taking a series of photos, and sometimes they don't give you as much as they know with the more formal pieces so. But it's a combination of all of that assessment. (Interview 3)



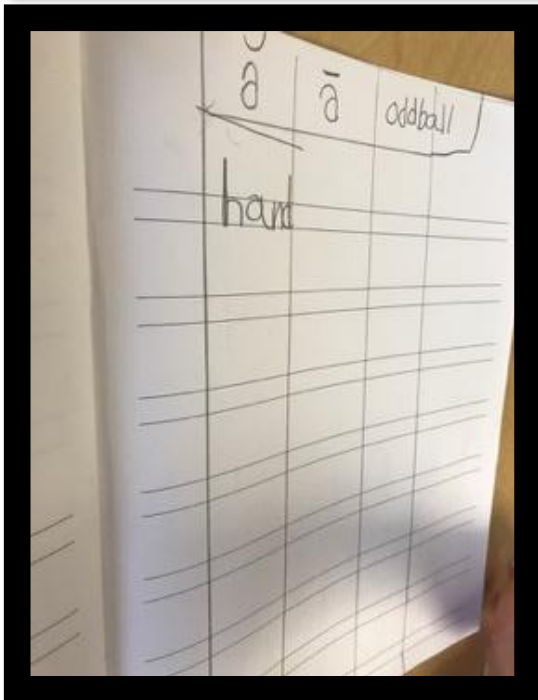
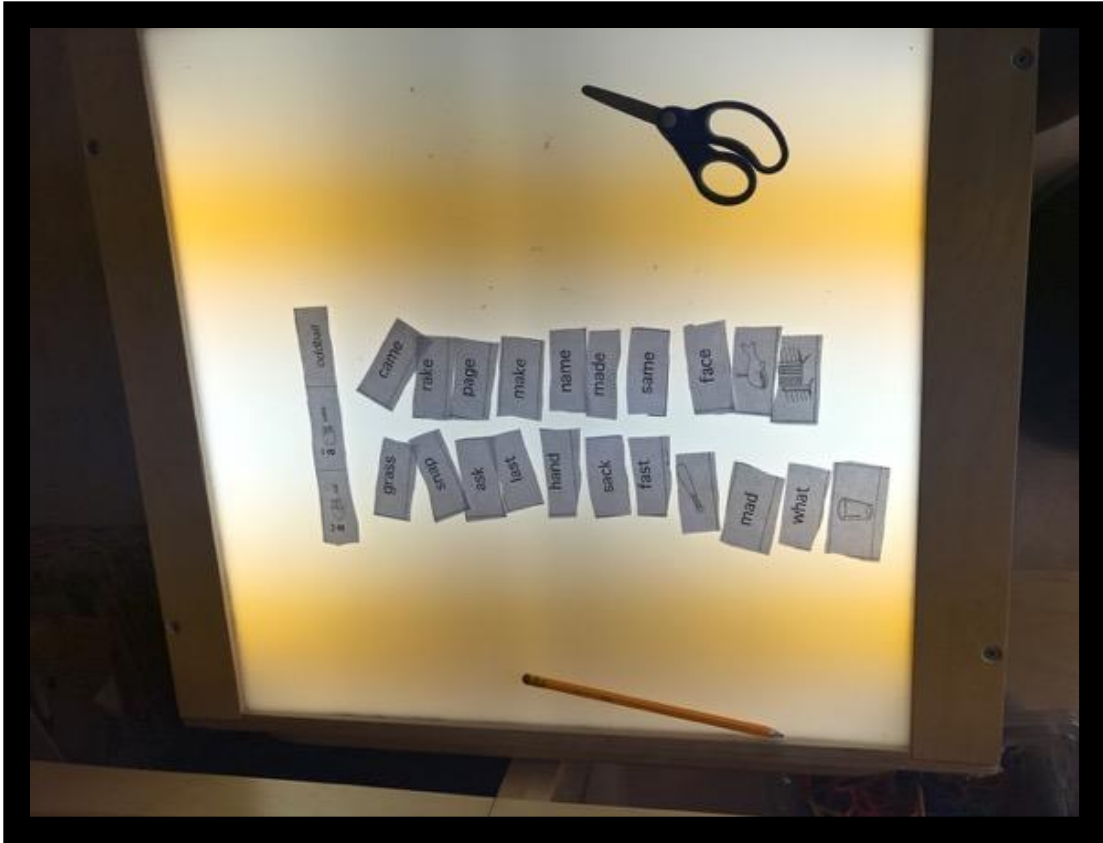


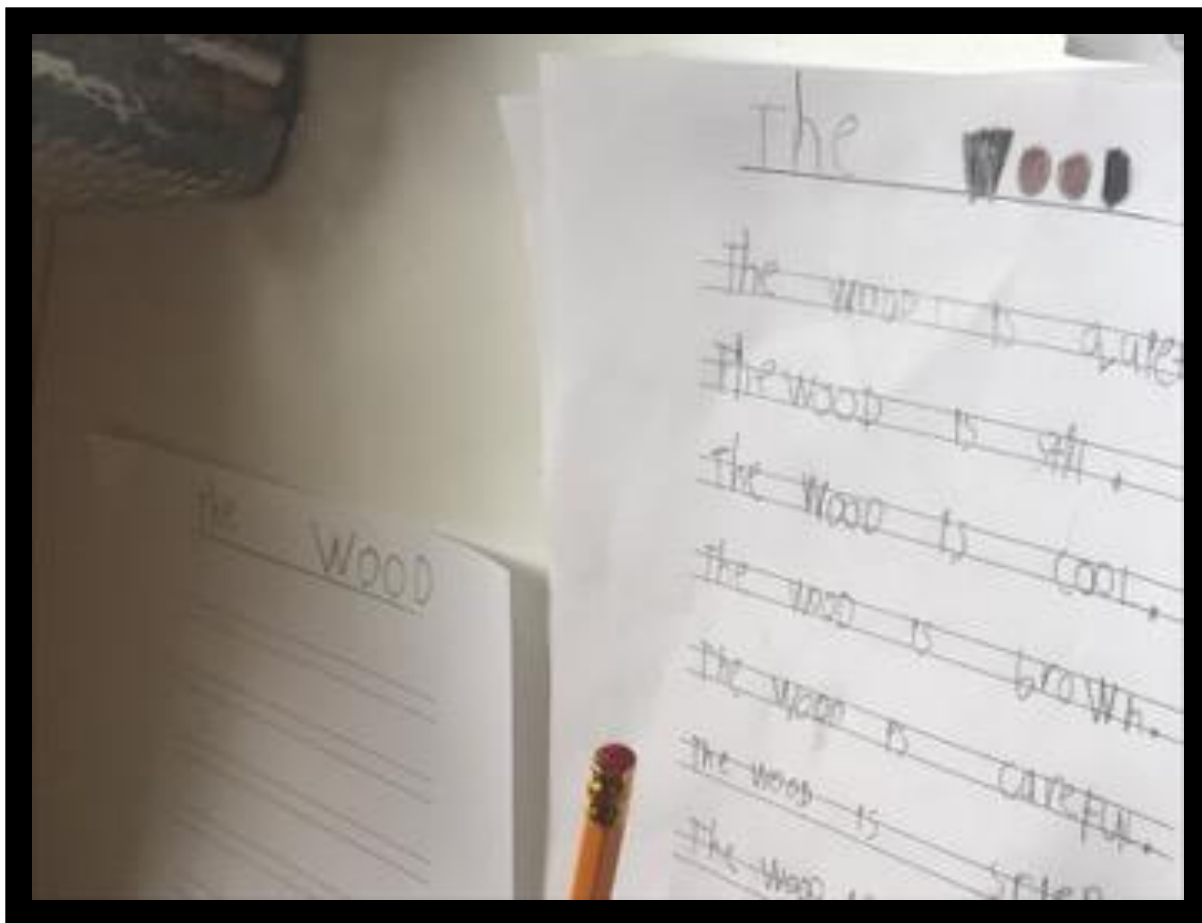
Figure 5.8. Standardized assessment.

Thus, these forms of standardized assessment enabled Catherine to focus on her assessment goals by determining “what I could expect in this age group” (Interview 2) to determine “what they’re missing, if they’re having trouble” (Interview 1). Some of the standardized assessment also combined modal opportunities. For example, “Words Their Way” sometimes used “the pictures...and sometimes...words, and the pictures” (Interview 1). Catherine offered to show these assessment resources to me.

Catherine thought assessment supported students when and where it was available through many different forms. The most important aspect of assessment was that students and the teacher were able to see growth.

In literacy, growth was seen through students creating multiple drafts (see figure 5.9). For example, if the students are able to show “that they know what periods are and what exclamation points are...independently after they’ve done the checklist, or are you having to go back to remind them” (Interview 2). While modal affordances were not made explicit to allow students to extend beyond grade expectations, assessment within Language here, was refined according to where students were starting from, specifically in the writing/reading centers. Catherine explained

I figure out what level they’re at and then I group them. So it’s a group discussion, so part, some of the kids are working on just decoding the words...while other kids are working on making inferences. Ah, or giving their opinion with evidence. So it just depends on the different groups for that piece. (Interview 2)



**Figure 5.9. Good drafts, adding colour.**

Success criteria, and arguably curricular expectations, still placed secondary where she recognized that you could “go back to the expectations, kind of go, oh yeah, we did that” (Interview 2) where Catherine saw “the Ontario curriculum...as a checklist” (Interview 3) where growth was still most important. Catherine also saw a need to “assess in multiple ways” as “you can’t just rely on the verbal or ...written communication” (Interview 2). She was hopeful that students would recognize these changes as well: “Do you see your own writing changing? Do you see that you’ve got spaces between your words? Like, that’s huge!” (Interview 2). For Catherine, it was important to check that students were able to make “that adjustment in (their) self-growth” via “build(ing) the internal motivation to do and to learn and think, and be critical” (Interview 2), which she understood as “not always explicit” (Interview 2).

### 5.2.5 Modes used as discussed in the interview

The specific types of social semiotic demands placed on students were explored via one interview question. This question, asked of Catherine “could talk to me about any opportunities [she] (had) to or what types of modes [she] tended to use in Language Arts, Mathematics, and Social Studies?” (Interview 1). Responses to this question were categorized according to the three disciplines. However, prior to exploring the three disciplines, Catherine saw that “in grade one, (there was) less of the written piece” (Interview 1).

In Mathematics, spatial, visual, and gestural modes were identified as the focus. However, the visual mode was explicated as “a big huge emphasis” (Interview 1) for Catherine. Catherine explained that visual modes were identified through “mental math strategies” (Interview 2) as these were “huge for (her)” (Interview 2), as well as using physical resources as “in our morning meeting like we’ve got the ten rack, and those our tools, but they are a visual piece” (Interview 2). “Spatial awareness” (Interview 1) was also identified as a key component for grade one, as Catherine relayed how she had “seen the research...(and) had people come in, researchers come in, and work with us on lesson study, to talk about how much spatial awareness is so important for algebra, and for a whole pile of different things” (Interview 1). Likewise, Catherine saw evidence of the gestural mode as she identified that within grade one, there were many “hands on” (Interview 1) pieces. For example, “[taking] the math pieces actually out, the pentagons and...play(ing) with them that way” (Interview 1).

In the Social Studies discipline, Catherine identified only one mode in response to this question. From her understanding, she identified “verbal communication” (Interview 2) as the mode that she “use(d) a lot of” (Interview 2).

For the language discipline, Catherine identified the modes of text, oral, aural, visual, and gestural. For example, Catherine identified how

at this particular age, there’s a lot of sitting and reading, and I’ll read to them, and they’ll read to me, looking at the texts, the structures of the text, we’ll act things out, so I don’t necessarily say ok, paint a picture about what we read, but then when

we get to poetry it's like, using a picture to write the poems to work as a piece of inspiration so, so I think it's it's throughout, I don't know, that's a really interesting question, I've really never thought about before. (Interview 2)

Catherine also identified how she used modal elements she explored with students in the language discipline, and how they connected to other modes through the example of a poem:

right now they're just beginning the poetry and looking at them, different kinds of poems, thinking about the words and the rhythm of the poem, and how you would hear that, and how you would communicate that, but then we'll move onto, one thing I have thinking on is, to listen to music, and then write poetry. And then also, they, last week they drew pic-we went outside, we drew pictures of observations out in the learning garden, they came back with their sketches, and then they used that to sort of inspire them to write poetry so, that's another example in literacy. (Interview 2)

Thus, Catherine explicated her identification of modal opportunities within the classroom, which were, in my opinion, vast. However, each discipline identified that specific modes were used and thus, connections made between semiotic demands needed to be examined further.

### 5.3 Modes Used in the Classroom

The modal checklists from each literacy event were combined to analyze the types of modes used occurring in each discipline. The format was also considered (i.e., in assessment or instruction, as a requirement or student construction, and with explicit or no explicit support to work through the mode). The results of the tables for each discipline is tabulated below.

**Table 5.1. Discipline: Language Arts**

Mode	Required	Student Construction	For Assessment	For Instruction	Explicit Support Provided	Explicit Support Not Provided
Text	6	4	6	7	4	6
Stylized Text (e.g., italics, spacing)	1	2	1	3	2	1
Music	0	1	0	0	0	0
Gesture	3	10	5	11	8	5
Image	4	2	6	15	11	6
Dance	0	0	1	1	0	0
Drawing	1	5	3	0	0	4

Painting	0	0	0	0	0	0
Graph	0	0	0	0	0	0
Speech	11	12	13	13	12	5
Other	0	8	3	4	4	1

---

*Note.* Modes not used: painting, graphing. Student construction highest in: speech.

Instruction highest in image. Majority of modes provided explicit instruction, particularly with image and speech, but no explicit instruction provided for drawing, and higher in text.

**Table 5.2. Discipline: Social Studies**

Mode	Required	Student Construction	For Assessment	For Instruction	Explicit Support Provided	Explicit Support Not Provided
Text	1	2	3	2	1	1
Stylized Text (e.g., italics, spacing)	0	0	0	0	0	0
Music	0	0	0	0	0	0
Gesture	1	0	1	1	1	0
Image	0	1	1	0	0	2
Dance	0	0	0	0	0	0



Drawing	0	1	0	1	0	0
Painting	0	0	0	0	0	0
Graph	0	0	0	0	0	0
Speech	2	4	3	4	1	1
Other	0	1	0	0	0	1

---

*Note.* None in stylized text, music, dance, painting, graphing.

Highest instances of speech again for student construction, as well as instruction.

**Table 5.3. Discipline: Mathematics**

Mode	Required	Student Construction	For Assessment	For Instruction	Explicit Support Provided	Explicit Support Not Provided
Text	1	0	0	4	0	2
Stylized Text (e.g., italics, spacing)	0	0	0	0	0	0
Music	0	0	0	0	0	0
Gesture	2	3	4	8	6	2
Image	3	0	3	7	5	1
Dance	0	1	0	1	1	0
Drawing	0	0	0	1	1	0

Painting	0	0	0	0	0	0
Graph	0	0	0	0	0	0
Speech	4	4	8	11	8	4
Other	5	5	3	3	2	2

---

*Note.* No stylized text, music, painting, graphing. Student highest in speech, instruction in speech and then gesture.


Results indicated that, of the lessons viewed, none drew on painting or graphing across the three disciplines. Moreover, in Mathematics and Social Studies, stylized text and music were absent. Dance was only absent in the Social Studies (“Investigative Research”) lessons viewed. In terms of modal constructions, students made most of their own constructions through speech and then gesture within the Language discipline. They were mostly assessed in speech, and then image/text. Instruction took place most often through image and then speech. Most modes were provided alongside explicit instruction, particularly with image and speech, but no explicit instruction was provided for drawing. In Social Studies, the highest instances of modal usage were oral for student construction as well as instruction. In Mathematics, the students tended to use speech, and instruction was in speech and gesture. Assessment tended to resemble modes used.

For example, Catherine transcribed student conversations. Transcriptions were a heavy focus in the classroom to see how students had developed.

## 5.4 Multimodal Literacy Learning Opportunities

The following tables are drawn from the multimodal analysis. They represent specific instances where students were provided multimodal literacy learning opportunities. The aim in choosing these examples were to visually showcase examples across the three disciplines explored. These are modes that were consistently observed during the instructional and assessment period. Auditory recordings are used in conjunction with photographs to provide context. Literacy events were found only in the language and mathematics discipline.

**Table 5.4. Language Literacy Events**

Date of Event	Description	Auditory Recording of Educator Transcribed	Photograph of Event
3/28/17	Catherine speaks to students (oral) and asks students to choose a book to read, in accordance with what they visually (visual) or linguistically (linguistic/text) read. Modes are supported through questions, and	<p>“I just asked you to make a choice between this one and this one, and now I’m asking why.”</p> <p>“How did you make a choice? How did you make a decision between this one and this one?”</p>	

finding solutions for students to self-direct. Catherine suggests students listen to their peers to understand how they can add meaning through vocal intonation.

“You just had three or four ways to figure out if you like this book or not!”

“Did you hear how she read that?”

Student: “She read it with expression.”

C: “What does that mean, with expression?”

4/03/17

Catherine holds up various books (visual, gestural) and invites students to choose a book strewn across the floor. Catherine refers to the book’s multimodal properties, referencing the possibility of retrieving information from the visual and linguistic

“We have books about seasons - you can get information from the pictures and the words.”



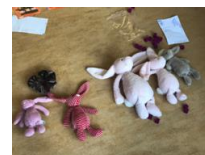
dimensions of the book. A student creates a drawing in response to what they read in the book.

04/05/2017

Educator scaffolds and discusses (oral) for and with students using building blocks and a whiteboard (visual, gestural) how they can create criteria to judge items brought into the classroom, and how to use visual and written elements to create a graph.

“Remember what I did was I judged on these four things. And I put them, whether it was the car that drove the fast...and then I put another one for which one was the favourite colour and I put another one for which one was the perfect shape.”

“This helps me decide so it has to be things like whether it’s your favourite, whether it’s the colour, the shape, so something that can apply to all those



04/13/2017

Educator tells students about what they need to include in the drafts of their writing about how they ranked objects. Educator uses written mode to show instructions.

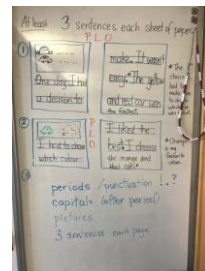
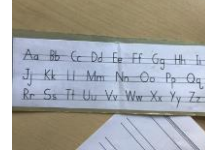
things, and then you're going to make a decision."

"What kinds of things do we need to check to make sure that our rough drafts can get to a good copy mode? And I will make this checklist for you, but I need to know what kinds of things we need on here."

"Where do the periods go?"

"We've got our drawings, our pictures, and our sentences. How many...how many sentences do we need per page?"

"How do we know that one's a good draft and



one's a rough  
copy.”

“Can someone tell  
us, some people  
are done their  
rough drafts, some  
people are just  
starting their rough  
drafts, some  
people are in the  
middle of their  
rough drafts, what  
do I mean by  
rough drafts  
again?”

05/24/2017

Educator uses a  
visual poem  
(visual, written) to  
explore why the  
author uses  
particular shapes  
to add meaning to  
the poem. Students  
then create their  
own poems.

“Describe, what  
was that about?  
What is unique  
about this poem?  
How is it written?  
Do you find poems  
in the shape of  
seagulls  
everyday?”



“Can anybody tell  
me why this author  
chose to make that  
particular shape  
with this poem?”

---







Talk to the person beside you. Tell us. Why did the author put this poem in this shape?"



“When you do your good copy, think about how you're going to shape your poem...so that it goes with your poem. Ok?”

---

**Table 5.5. Mathematics Literacy Events**

Date	Description	Auditory Recording of Educator Transcribed	Photograph of Event
03/29/2017	<p>Educator asks students to determine the types of shapes they can create with the cubes they have been provided. The educator uses text to display student responses and discusses with students (orally) ways that they can connect the cubes.</p>	<p>“I’m going to give you three cubes.”</p> <p>“I’m going to give you more cubes. But, we’re gonna start first with three cubes. And I want you to make a _____. Any shape so that these are connected.”</p> <p>“So I’m going to give you three. Ok? Make any shape you want, ok?”</p> <p>“Put the shapes out in front of you. What are you having trouble with?”</p>	   

“Everybody take a look. We’ve got the same shape but in a different way”.



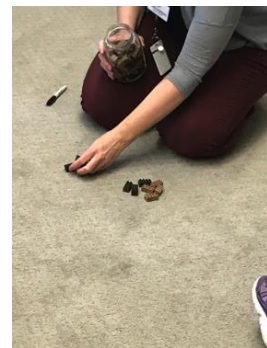
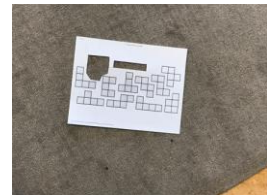
cubes	3	4	5
# of shapes	2	3	1

“The idea is that, obviously these are connecting shapes, so that they can connect this way, or they can connect this way, but they can’t connect like this.”

04/05/2017

Educator invites students to become familiar with the creation of 3-D shapes through multimodal elements such as gestural and spatial, as well as the visual by pairing nets to completed 3-D shapes and asking students to use their imagination.

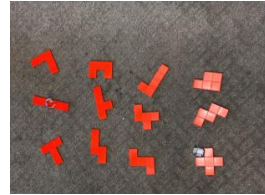
“In these shapes, only some of them, not all, only some of them can be made into cubes, into boxes, let’s say boxes. And boxes, cubes are all covered ‘round, boxes you can put stuff inside, like a shoebox.”



“There’s a crease  
there, crease  
there, crease  
there.”



“If you fold it  
there where the  
creases were,  
would it make a  
box?”



“You’ve seen  
them in a game.  
Do you remember  
what game it  
was?”



“But these, these  
are always 12 of  
these, if these are  
a complete set,  
there are always  
12. Do you want  
to know the name  
of them? They are  
called  
pentominoes. And  
one thing about  
pentominoes in  
particular is that  
they’re made of



tiles, put  
together.”

“So since you  
can’t bend them,  
what strategies  
are you going to  
use?”

“Let me clarify.  
So, I want you to  
take one shape.  
So, for example, I  
want you to take a  
shape and I want  
you in your mind  
to lift up the  
sides, where the  
creases are and  
determine  
whether this will  
make a box.”

“This would be  
the bottom, and if  
we were to fold  
up this side, fold  
up this side, fold  
up this side, fold  
up this side, we  
would have a box,  
with this shape,

OK? So that's what you're trying to do. But you can't bend them, you have to visualize them. You have to use your imagination to see can I imagine what it would look-

"Put up your hands if you want to share your strategies."

05/24/2017

Educator invites students to use gesture as a way to indicate probability. The instructional period scaffolds this using oral instructions, mimicking the gesture found on the photocopied visual cards of a thumbs up and thumbs down.

"Certain. What does that mean?"  
"What does this word impossible mean?" –

"I'm going to give you a scenario just to make sure we're really sure about these words."

"Is it certain or impossible that I



will brush my teeth at least once per day? So, put up your hand like this, certain, if you're certain, or impossible.”

“So you saw what I put into this bag. Is it impossible or certain that I will pick out at least one hexagon? Show me your thumb. Show me your thumbs...so we have some different opinions.”

05/31/2017

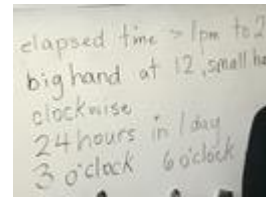
Educator invites students to learn about how gestural movement within a clock is tied to the meaning of time. This was based on some students' interest in knowing how to tell time. Educator uses a

“So there are people interested in finding out about the clock.”  
 “Let's spend some time finding out about the clock.”  
 “What does that mean, tells you the time?”



visual representation of the clock on the overhead, as well as writing on the whiteboard to explore these concepts. Students explore time from a tactile position, moving hands on individual clocks.

“So, it shows time, do you know what that's called?”



“Elapsed time. Which means, exactly what you were saying. That it would go from one pm, or one o'clock in the afternoon to two o'clock.”



“What else before we get there? What else do you know about clocks?”

“Now, why did you say the word hand? These are my hands right here...why did you call that a hand?”



“So normally the clock only goes this direction. So this is clockwise. It usually doesn't go this way, unless you travel to another country and you're changing your clocks because they have a different time.”

“Watch the little hand as I turn the big hand. Watch what happens to the little hand. Turning the big hand, the little hand is moving as well.”

“They will say there is a 24-hour clock. Which is, we have 24 hours in a day.”

---

“So I'm going to  
 give you little  
 ones, right  
 now...I'm going to  
 give you this  
 card. And on this  
 card is a little car  
 that represent[s].  
 So we're just  
 going to work on  
 5 o'clock, six  
 o'clock, on the  
 hour.”

---

As seen in the tables above, literacy events emerged where Catherine provided opportunities for students to explore multimodal texts in student-led or inquiry-led contexts. For example, Catherine modelled examples of criteria for judging objects, using a small whiteboard with counters. Students were tasked with bringing in their own objects to “judge” them. Each student then created their own criteria to judge their objects, which involved students creating multimodal texts of their results with writing, colour, or symbols representative of “yes” or “no” like a checkmark or “x”. Later, Catherine discussed with students the explicit modal affordances of the written mode, discussing with them the elements that would need to be included in a “rough” vs “good” draft so that they could recount their experiences creating criteria.

In a more structured literacy event, students were shown poems in shapes representative of the theme or subject of a particular poem. Students were then able to choose a poem in accordance with their interests to write about, choosing the image the poem would be written in the shape of. However, the modal affordances of these shapes were left to be explored by each student, where

they chose to, for example, bold words or include colour. Likewise, Catherine placed multiple picture books on the floor and students were encouraged to select one that interested them to complete the assignment. Students had to research information from the picture books and write down what they had learned. It should be noted that Catherine had previously referenced the book's multimodal aspects when the students were in their reading groups. She explained that they could retrieve information from the visual and linguistic elements. One student chose to extend on the activity, drawing a pumpkin; however, this was not part of the semiotic demands placed. Students who worked outside of the demands placed sometimes had access to resources that enabled them to do so. For example, the alphabet on the laminated placard that assisted students with their writing.

In the Mathematics literacy events, Catherine invited students to become familiar with modal affordances to be representative of particular meanings. For example, Catherine invited students to use gesture (thumbs up and down) to be representative of "certain" or "impossible" as a way to examine probability. The instructional period scaffolded these gestures using oral instructions, as well as mimicking the gesture found on the photocopied visual cards indicating thumbs up and thumbs down. Catherine invited students to learn about how gestural movement within a clock is tied to the meaning of time, per the interests of some students in knowing how to tell time. She used a visual representation of the clock on the overhead, and she wrote on the whiteboard to explore these concepts. Students also explored time from a tactile position, moving hands on their individual clocks. In these instances, the receptive and expressive meaning making expectations were connected via an explicit teaching of the modal affordances of gesture.

Similarly, Catherine asked students to see types of shapes they could create with the cubes they had been provided. At the beginning of this literacy event, students were creating shapes that were the symmetrical reflection of another shape they had created. Therefore, some students thought there were more shapes that could be created than was possible with the number of cubes provided. Catherine stopped the lesson to show students that reflections were the same shape by rotating the cubes in different positions. Therefore, semiotic demands were met because the modes used during the activity portion of the lesson were matched through the instructional

portion of the lesson. These modal gestures were further clarified where she relayed student responses with a visual tabulation which visualized students' evolving meaning making.

## 5.5 Conclusion

In conclusion, the results indicate that the grade one educator utilized a wide variety of modes and resources to enact the classroom curriculum. Catherine saw it imperative to give students “the opportunity to construct their own knowledge...so that they can make those constructions and meaning themselves” (Interview 3). Essentially, she felt “very passionately that we [as educators] have to provide the opportunities for them” (Interview 3). While instructional supports were occasionally provided to students to meet social semiotic demands placed, they were not always explicit, which meant the ways in which students were asked to represent their meaning making did not always meet the expectations of the instructional period. Whereas the classroom enacted the Ontario programmatic curriculum, the pedagogical framing greatly influenced the classroom curricula. Catherine saw that “semiotic based practices” could “be beneficial to teachers” (Interview 3) where she might consider new forms of assessment. However, the extent to which this framing influenced the results must still be examined. Thus, this framing, along with recommendations to enact multimodal pedagogy in the classroom, forms the foundation for chapter seven.

## Chapter 6

### 6 Findings: Classroom Two

This chapter presents the findings from classroom two. These findings respond to research questions about the social semiotic demands placed on students within the language discipline. They also respond to questions about the instructional supports students were provided to meet these demands.

Like chapter five, chapter six begins with a description of the fifth grade classroom: how it was set up, which frameworks were employed, and the prominent physical and tangible resources available to the educator and students. This description follows modal frequencies and modal constructions which the educator and students encountered most frequently in the classroom. I then present findings from audio recordings with the educator, which concerned her thoughts on multimodality. The remainder of this chapter provides examples of multimodal literacy learning opportunities presented to students during the Language discipline.

#### 6.1 The Classroom Contextualized

I began by implementing Dyson and Genishi's (2005) notion of "casing the joint." This meant, in part, paying attention to how participants made meaning and how the classroom resources were used to determine the types of semiotic demands placed on students. The description below includes information about resources available to students as well as the classroom layout.

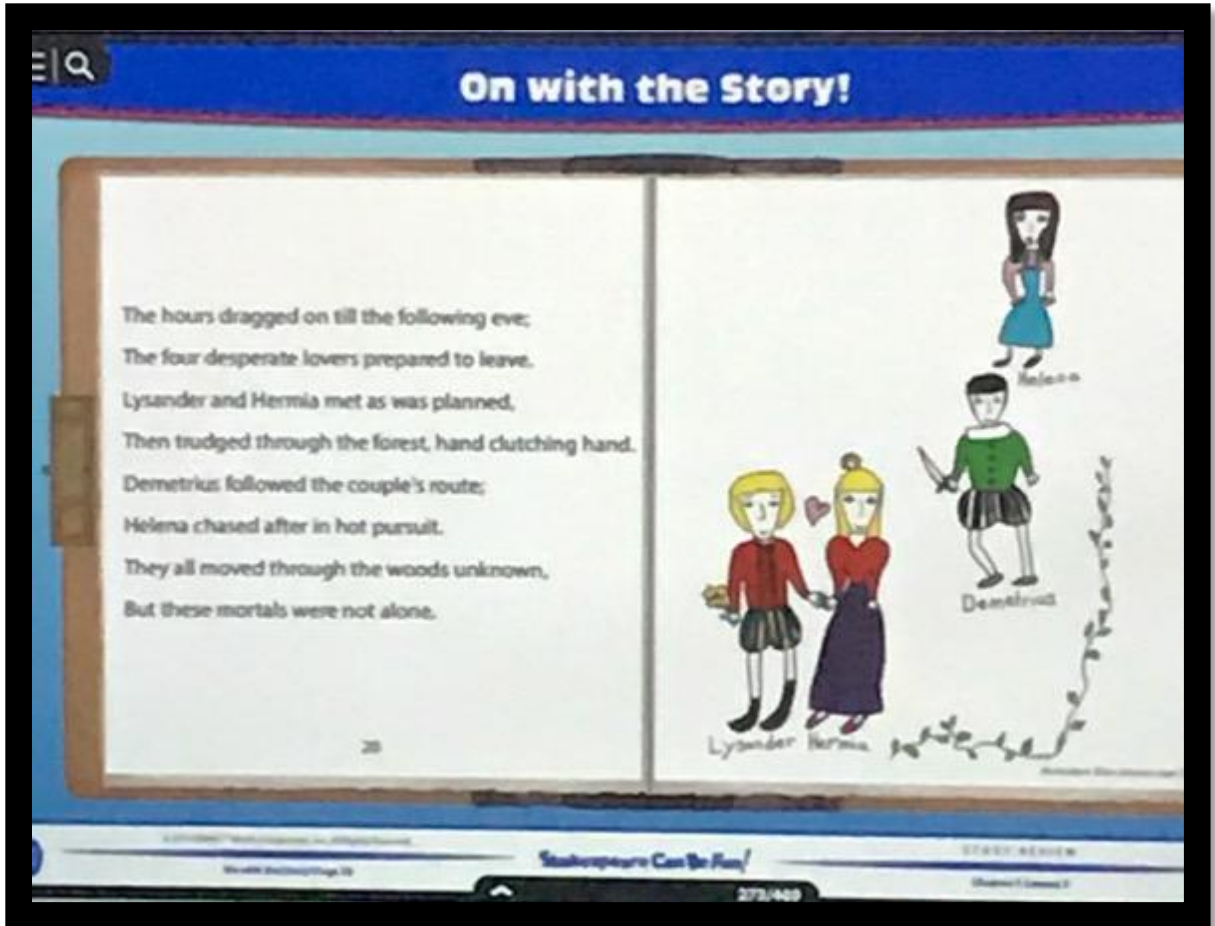
To begin, the grade five classroom was part of a public school board in Ontario, Canada. This meant the school belonged to the public system governed and funded by the province. The students did not have to pay tuition to attend this school. However, the educator was mandated to teach the Ontario programmatic curriculum (in this site- OME, 2006). The classroom employed the *Shakespeare Can Be Fun* program to the Language

instruction period.<sup>9</sup> This framework was and is “a literacy curriculum developed from an established internationally known children’s book series (Shakespeare Can Be Fun) and instructional seminars created by the series’ author, Lois Burdett” (Hibbert, 2016, p. 3). This framework was used to work through the expectations outlined in the Ontario programmatic curriculum Language document (OME, 2006). Therefore, I viewed the Language discipline for data collection. Instances where the educator mentioned that the program was related to other subjects, is described in the audio section below.

The classroom was large enough to house rows of desks (which were regularly reconfigured, such as in groups of six), a round table for conferencing, a carpeted area with couch, a digital whiteboard, and various resources such as individual computers, books, interactive word walls, and bins for various assignments. Upon entering the classroom, the conferencing area and Laura’s work area could be seen to the left. There was a book shelf here that housed the bin where students would hand in completed work. Next to this was a carpeted seating area with a couch. Manipulatives were abundant in the classroom, running adjacent along the wall next to the carpeted area. If you followed this wall to the front of the classroom, another desk could be seen where Laura had set up a computer which was attached to the interactive whiteboard, right next to it, could be seen. The interactive whiteboard was the focal point of the Language lessons (see figure 6.1 for example of slide student would view for each lesson on the interactive white board). This was the area and digital resource in which most lessons that I viewed took place. From this position, I could see the students’ desks. High on the wall above the whiteboard was an interactive word wall. Words from the Shakespeare unit were included in this word wall. Colourful posters throughout the room- including some hanging from the ceiling- expressed motivational phrases as well as classroom rules.

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<sup>9</sup> This was the first time the educator used the Shakespeare program, conceived as a writing program. It was also the first time the program was being observed.



**Figure 6.1. Example of slide for digital whiteboard.**

## 6.2 Modes Used in the Classroom

I tagged photographs using an institutional management system. This system allowed me to track modal usage and modal supports provided in the classroom curriculum. The tagging adhered to the modal names provided by Cope and Kalantzis (2009). The term “multimodal” was not used as a tagging feature to determine which modes were drawn upon most frequently. The tagging detailed modes used during this period for both assessment and instruction. I also used audio transcriptions to determine if explicit support was provided or not, if it was a required modal construction, or if the student constructed it.

The modal tagging completed from each literacy event was combined to analyze the types of modes used during the Language period. Results indicated that none of the lessons that I viewed drew on the tactile within the Language discipline. The oral mode was most frequently used, both within the instructional and activity portion of the lesson. The written and visual modes were the next most frequently used. The majority of modes provided explicit instruction, particularly with the oral mode; however, assessment modes did not always match with instruction modes. The written and visual modes were most often found within the digital whiteboard resource. The spatial and auditory modes were tagged once.

### 6.3 Laura's Thoughts on Multimodality

I chose "Laura" as the pseudonym for the teacher participant of site two. Audio recordings were used after the Language period (once the students had left the classroom) to ask Laura short questions about modal and social semiotic opportunities presented. Laura spoke about the multimodal nature of the *Shakespeare Is Fun* curriculum. She discussed the curriculum as a way for students to make meaning from the grammatical components of the language curriculum because it was engaging. For example, by discussing how student retention was not visible following "language structure lessons" (audio recording, 2017-03-06) whereas when connecting this to characters discussed within the framework, students were reminded.

Likewise, Laura explained how the components of the curriculum enabled her to make multimodal, cross-curricular connections. Laura described a Salvador Dali inspired art project she had done with students that was co-constructed. In this project, "the paper would be folded back, so someone would draw the head, the you fold it back, then someone draws the body, then someone else draws the legs" (audio recording, 2017-02-24). Subsequently, Laura was able to apply this co-construction to the *Shakespeare* curriculum, where students used gesture and oral modes again to create a "reconstruction of (a) poem" (audio recording, 2017-02-24). Laura explained that she "was impressed with how well they read them, like I thought it would be a bit painful, but they were really getting into trying to make it meaningful" (audio recording, 2017-02-24).



Laura often spoke about the multimodal affordances and constraints of the digital resources being used within the *Shakespeare Can Be Fun* curriculum. She also discussed how these resources influenced semiotic demands. The *Shakespeare* curriculum included slides for students that could be seen on the digital whiteboard, photocopied handouts for assessment, as well as a digital teacher guide that could be accessed on another digital resource. Laura used a digital tablet to access her teacher's guide. However, she mentioned she “love(d) everything in the teacher's guide, I just wish I could have a hard copy” (audio recording, 2017-02-24). Laura described how the linguistic mode afforded her the ability to add onto the teacher's guide, while at the same time, there was too much text within the program to read. Likewise, the digital resource impacted her ability to access key features:

So what, what I find anxiety producing as a teacher is that I want to have my teacher guide like to prepare for a lesson. So it's got the projectables and the printables, which is great 'cause I can just flip through and scroll through but, then to get to the teacher's guide, when it displays on here, 'cause I can't have the projected thing, and the teacher's guide up there...When it comes up on here it's so tiny...If I want to annotate anything it's a lot of text for me to get through. And if I just want to take a few key questions, I can't, and it's unprintable, the teacher's guide is not printable. (audio recording, 2017-02-24)

Laura also described difficulties with operating the digital technology. For example, that it took a long time to “load printables” (audio recording, 2017-02-24), and how the curriculum would time out, and then she did not wish to log back in “in front of the class” (audio recording, 2017-03-06). In these instances, modal affordances and constraints associated with the curriculum were tied to the digital resources employed. These sentiments were also claimed for the assessment portion of the lesson. Laura explained she had moved to a different digital program because students could use it. As explicated, students did not know how to access documents, but Google Drive automatically saved their work for assessment:

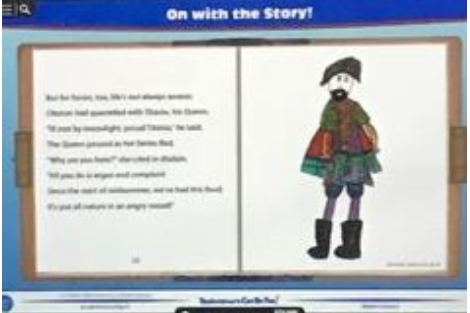
This... saves it. Because they don't know how to save a document. And they don't know how to save it in an h drive or to rename it and put it somewhere so they can find it again. So, I would say 50% of the time they wouldn't be able to get to their work and have to start again. (audio recording, 2017- 03-27)

Thus, Laura’s understandings of multimodal offerings for instruction and the types of semiotic demands were influenced by the curricular framework operationalized through digital technology.

## 6.4 Multimodal Literacy Learning Opportunities

The table below shows specific instances, where instructional supports were provided to students in meeting demands in the classroom. The aim in choosing these examples were to visually showcase, modes that were consistently observed during the instructional and assessment period. As such, the aim is to look at the modes used, as well as how they are used (in other words, to explore semiotic demands, modal affordances, or content material). Auditory recordings are used in conjunction to provide context.

**Table 6.1. Language Literacy Events**

Date of Event	Description	Auditory Recording of Educator Transcribed	Photograph of Event
02/16/2017	Educator uses a visual slide and oral instructions to ask students to use vocal intonation that reflects the Shakespearian language and character. Educator uses gesture by	“So everybody's sitting up with your nice loud reading voices...Here we go, 1,2,3! Now stop. We're going to go group by group, ok? So it's not everybody	

pointing to reading at the  
students to same time. So  
indicate which we'll start  
group should here.”  
begin reading. “This is a tricky  
sentence, don't  
you think? Can  
you say it a  
little creepier?  
[Students read  
again]. Ok, and  
we're back to  
the living dead-  
excellent. Back  
over to you  
guys! [Student  
group reads].  
Can you guys  
do that again, a  
little more  
together?”

02/16/2017 Educator "When I knew  
discusses we were talking  
arguments with about  
students orally arguments  
and shows a today, it made  
multimodal me think of  
video about something that  
arguing to I wanted to  
show you guys,



contextualize meaning. Students are invited to turn to one another to discuss thoughts.

that I think you'll find entertaining. Talking about what exactly an argument is. [Name] would you get the lights please? Now in this video, a man has gone to an argument clinic, and he's paid to have an argument...he's gone to a place where you can buy an argument [Educator plays video]. Now, what do you think? Good argument, not a good argument?"

Students: "Not a good argument."

“Ok, so. Back to the original question that [name] was asking, is disagreeing the same as arguing? Talk in your groups.”

02/16/2017 Students are given explicit directions about how to complete their written assignment. Students are given spatial directions which allows students to share an understanding of their meaning making with their peers. Students create their own

"That's a very fighty line, isn't it?"

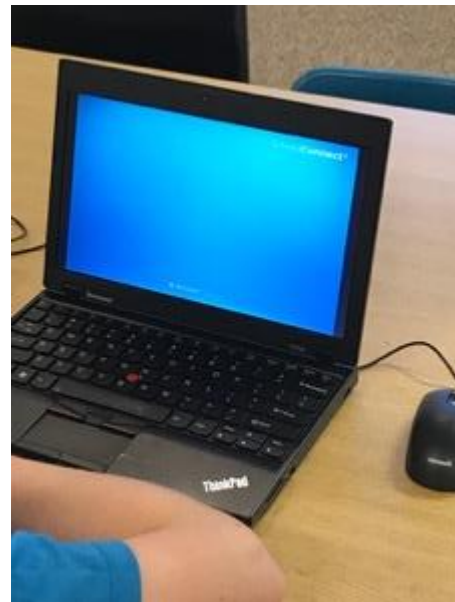
"How about get up and walk around a bit, go share with somebody around the room."



sentences in  
response.



02/16/2017      Students must      "And, you can  
use writing on      go and like and  
their netbooks      comment on  
to share their      other people's  
meaning      just make sure  
making      you're putting  
processes      yours not as a  
about the text's      comment, it's  
multimodal      got to be a new  
affordances      post by you.  
with peers.      Ok? Yep? Just  
Students use      do one, how  
gesture to      'bout for every  
access      one you post,  
materials.      you have to  
comment on



three other  
people's.

Deal?"

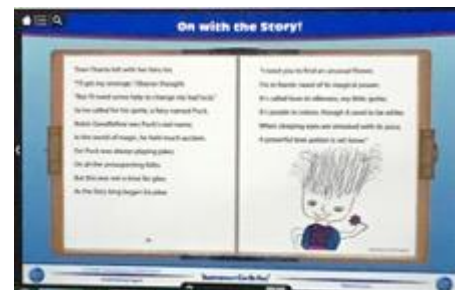
Students:

"Yeah."

"It's a three for  
one special."

02/24/2017 Students are explicitly directed by the educator to add meaning to the poem using vocal intonation. Students are shown a visual slide which leads into a discussion about poem making.

"Add some drama, add some feeling to your poem, in the way you use your voice."



02/24/2017 Educator uses gestural and oral instructions to explain that students will be creating poems according to the words they pull out of a brown bag. Students are asked to produce an oral presentation when this activity is completed. Educator explains to students that this is a surrealist game.

"Take the next word, and stick it down."

"Take the next one and stick it down, cut it out."

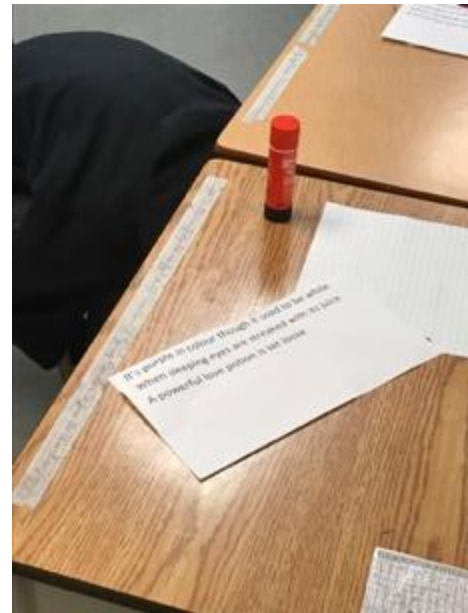
"We're going to take the text and it's a surrealist game...you cut up a poem and then you pull it out without looking...you have to glue it down whatever order you pull it out."

"That's what it says. But if you think of it like a song and you group your words together, and read it [reads], doesn't





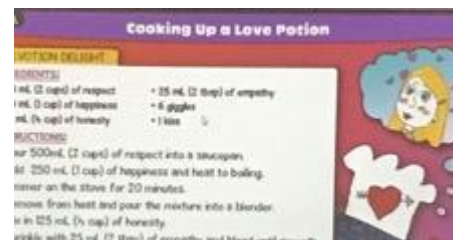
make more sense, but at least the words are group[ed] together in a more fluid way. Kay? so you have to practice how you're going to read your poem aloud. You could go all together, or you could go you do some, I do some..."



"Go with clumping that makes sense to you and your partner in terms of meaning."

02/27/2017 Laura uses oral and gestural instructions to describe recipe making (mimicking actions taken)

"So up to this point, all your ingredients are in a glass measuring bowl. Do you want to pour



in conjunction with the slide. Instructions are used as a lead-up to the assignment.

them into a large saucepan? Ok. So, so far, what you've done, you've taken it, put it into a blender, then you take it from the blender and put it into a glass."

Student: "Oh."

"Don't you want to blend it?"

Student:  
"Yeah."

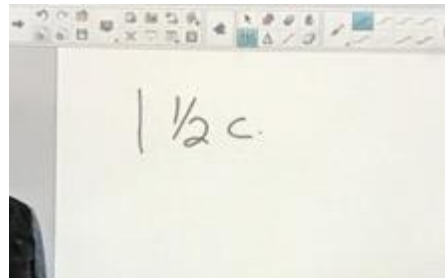
"Yeah. So you need to blend 'till smooth or blend till fluffy, I don't know. What do you want to do with it?"

02/27/2017 Students create their recipes in response to the outline provided on the digital whiteboard, following oral and written instructions from the educator.

"So you have to list your ingredients in the order that you use them in the recipe. Ok? With precise quantities indicated sometimes using unit abbreviation.

So I'm ok with you either using mLs if you know them or cups and tbsp. Pick your comfort level you don't have to do both."

"Instructions! That are brief, clear, and written in order from first to last and often numbered. Yes, they will be numbered.



Active verbs.  
such as boil,  
mix, and pour.  
No put do the  
stuff with the  
stuff take the  
stuff..."

"Sometimes a  
photograph of  
the product we  
will leave till  
the very end if  
everything else  
gets done. You  
may draw a  
picture of your  
love potion."

"I will leave  
this screen up  
because this has  
your checklist  
and a sample of  
the recipes.  
Now, you will  
have this for  
your good  
copy, but I  
want you to do  
a rough copy in  
your notebook,

your red notebook first. But, here's what's nice about this. You don't have to use these words, but they've given you some verbs that might be helpful when you're writing your recipe. Ok?"

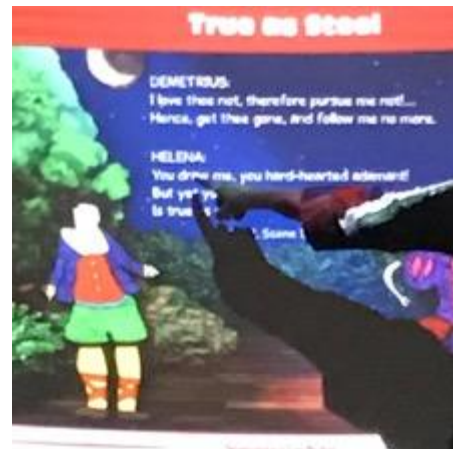
02/27/2017 Educator explicitly states to students that they need to use the gesture of hand raising in response to what has been discussed and viewed on the digital whiteboard.

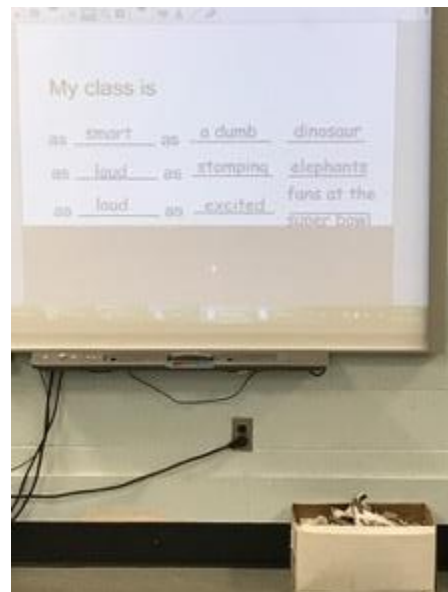
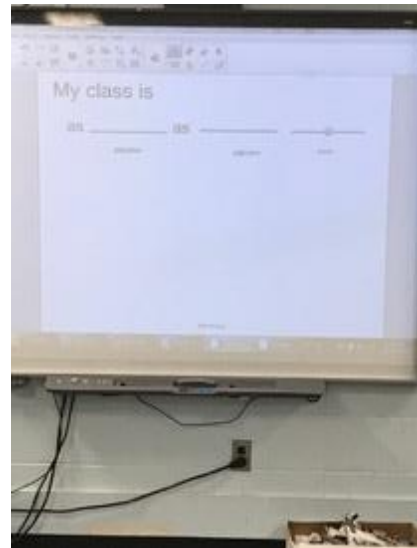
"I will be waiting for every hand to be in the air."



03/06/2017 Educator uses oral instructions to clarify meaning within the written slides, focusing on similes that students will create. Repetition between oral and written are used.

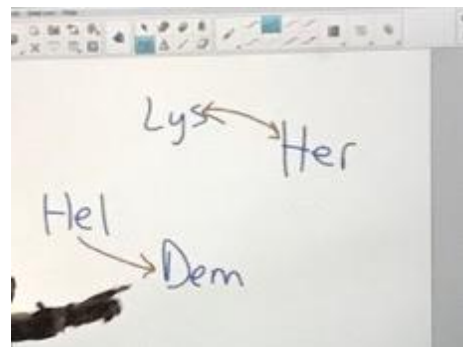
"Even though you may not know what that word is, do you think you could figure it out from the sentence?...Talk in your groups, come up with one synonym."



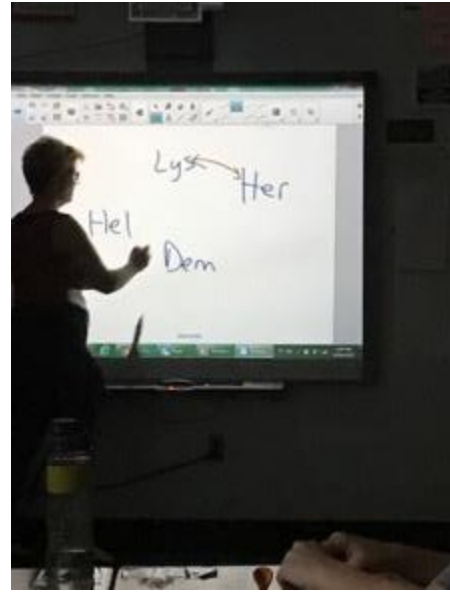




04/10/2017 Educator "Refrain is like describes words a song, the to students and chorus in the uses a visual song" [Laura drawing to show the starts singing] characters' And she's like relationships argh!!" throughout the text.



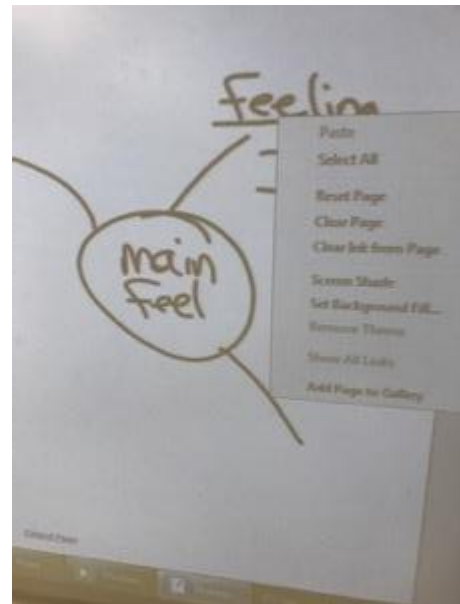




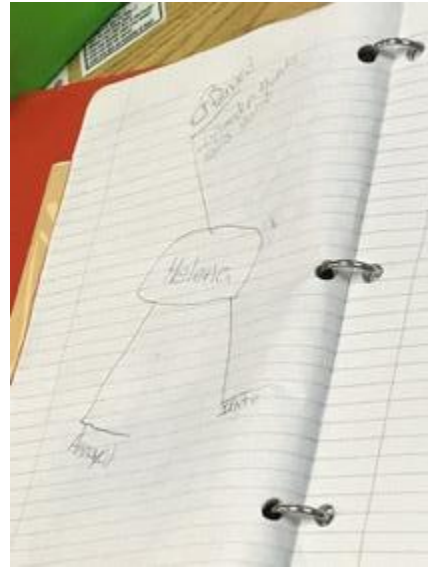
04/10/2017 Educator uses oral mode to describe that students will need to create a journal entry. Educator provides an example of a concept map on the digital whiteboard (visual) as a way for students to organize their thoughts.

"Use as or like to make a comparison. You have to include one simile in your journal entry, k? And finally, personal thoughts and feelings, those are things that all need to be in there. Obviously, it's your journal."

" When you do your plan...I



will let you  
 either do a  
 hamburger or  
 just a web of  
 your choice, k?  
 So, hamburger  
 would be  
 obviously a  
 feeling, k? And  
 just say a  
 feeling and a  
 detail. Feeling,  
 detail, feeling,  
 detail...do the  
 fillings. Same  
 thing for the  
 web. Main  
 feeling, and  
 then feeling,  
 and how are  
 you going to  
 describe it, you  
 can't just say  
 "I'M MAD!"




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The literacy events detailed in the table above were often positioned around the digital whiteboard where students were shown multimodal texts and directed to interact with these multimodal texts by Laura. For example, students created mind maps based upon the mind map that Laura showed and drew on the digital whiteboard. Laura created a fill-in-the-blank to scaffold examples of constructing a simile, Laura created arrows to represent their relational interactions between the main characters, and students were shown excerpts of *A Midsummer Night's Dream*. Students were explicitly directed

(through oral instructions, or gesture, such as pointing a finger) to read these excerpts in groups. In these groups, they were asked to read like a particular character or with a particular vocal intonation. In each of these instances, the expressive and receptive meaning making expectations were matched.

Similarly, Laura explicitly stated that during these periods where students were interacting with the digital whiteboard (including, for example, question and answer periods), students needed to use the gesture of hand raising in order to share their understanding with the classroom. This particular modal affordance was utilized in almost all instances surrounding the digital whiteboard; however, students had to share their meaning via the oral mode. The oral mode, and its affordances, were present throughout these literacy events. For example, Laura directed students to add meaning to choral reading through vocal intonation to produce an oral presentation in response to creating a poem. Students were directed to discuss what the written content or digital content (e.g., video) meant on the digital whiteboard slides, including, for example, to determine how to write a recipe.

## 6.5 Conclusion

The results indicate that Laura utilized a wide variety of modes and resources to enact the classroom curriculum. The oral mode was most commonly used for instruction and the linguistic mode was most often used for assessment. Laura saw the Shakespeare Curriculum as a way to provide students with the opportunity to create better connections between lessons, where they were able to recall material learned because of, for example, the characters in this curriculum (audio recording, 2017-03-06). And yet, the instructional period still required using digital resources to extend this material.

Thus, while instructional supports were provided to students to meet social semiotic demands placed, they were explicit only within the oral mode, which meant the ways in which students were asked to represent their meaning making did not always meet the expectations of the instructional period. Whereas the classroom enacted the Ontario programmatic curriculum, the pedagogical framing greatly influenced the classroom curricula. The extent to which this framing influenced the results, as well as how these

results compare to classroom one, is what will be explored in chapter 7. Moreover, recommendations for enacting multimodal pedagogy in the classroom will be provided based on these results to answer possibilities for the affordances and constraints that may be offered so that educators and students can make meaning from the classroom curriculum.

## Chapter 7

### 7 Discussion, Recommendations, and Conclusions

This chapter explores the study's results, compares them to the literature, and provides recommendations for how multimodal pedagogy may be implemented within elementary classroom curricula.

#### 7.1 (Re)Examination of the Study

I think back to the study proposal, and I realize the extent to which this research has transformed and mutated. I began this study to understand and identify types of semiotic demands placed within classroom curricula. I understood these semiotic demands as something that was potentially unrealized. The findings of the study included new insights into the nature of curriculum and the role of teachers therein. Specifically, as I detail in this chapter, the concepts of teacher agency and curriculum as fluid rose to the fore.

I conducted interviews where teacher agency emerged as a prominent focus. I also identified complex interactions between the various elements of classroom curricula, such as the teachers, children, resources, institutional, and programmatic curriculum. I suggest teacher agency is integral to developing and strengthening pedagogies that create inclusive classrooms where children can be supported in their meaning making.

From this finding, I recognize *classroom curriculum as fluid*. This recognition works from a conceptualization of classroom curriculum as built from a multitude of constituents and their interactions, which includes teacher agency. A *classroom curriculum as fluid* is not bounded by the physical space of the classroom; it extends on the notion of classroom curriculum (Doyle, 1992), considering that the classroom curriculum is affected and connected to curricular constituents that originate from outside the physical classroom. These constituents might include, for example, decisions made by educators with fellow educators during a meeting about how to frame objectives from the programmatic curriculum, which are then enacted within the physical boundaries of

the classroom amongst, for example, the educator, children, and resources. In my discussion, I thus include interactions amongst the constituents, such as teacher pedagogies to meet semiotic demands and how educators and children interacted with resources.

I also identified the central role of the educator in mobilizing the programmatic and institutional curricula, and hence in this chapter seek to bring this finding into relief. Further, I understood in reviewing the data that I needed a theory of curriculum as complex and mobile to help me understand the interactions between educators, the children, resources, and differing levels of curricula. Thus, in this chapter I expanded my initial theorizing of curriculum.

## 7.2 Conceptualizing Agency

The literature has conceptualized agency in numerous ways; for example, as described in Actor-network theory (e.g., Latour, 2005) where non-human entities are seen to have agency within a network, or three-part models, such as those proposed by Hewson (2010), which described agency as an act for oneself, another, or as part of a community. To respond to my research questions, I conceptualized agency in a way to highlight how educators constructed/did not construct multimodal literacy opportunities in the classroom curriculum. Some of what seemed to be implicated were the curricular frameworks (i.e., programmatic, institutional) in place, the educator's beliefs and/or experiences, and/or the resources available. I specifically drew on an *ecological perspective* of agency (e.g., Biesta, Priestley, & Robinson, 2015). This perspective promotes a view of the classroom curriculum as an emergent phenomenon resulting from the interplay of the individual, the environment, and the resources available in a given context.

### 7.2.1 Conceptualizing agency and curriculum

Doyle (1992) conceptualized classroom curricula as encompassing the day to day classroom events. The data suggests that these events include the dynamic processes involved between the educator and the children, and the materials and resources employed. When considering agency therefore, particularly teacher agency, this study

situates the *classroom curriculum as fluid* within an ecological understanding. Ecological (e.g., Priestley, Biesta, Philippou, & Robinson, 2015) agency literature acknowledges not only the agency of the teacher, but also the material constituents tied up within such agency.

Scholars have defined teacher agency as ecological. Biesta et al. (2015) defined teacher agency as “agency that is theorised specifically in respect of the activities of teachers in schools” (p. 625). In the case of this study, teacher agency includes: the enacted curriculum where educators enact or activate various curricula. Teacher agency is also how they interact with other constituents, namely resources and the children. Biesta et al.’s definition of teacher agency enabled me to highlight the idea of the *classroom curriculum as fluid* because it encapsulates educators’ activities broadly, rather than those that are bounded by the physical classroom space. The study conceptualizes agency “rather than seeing agency residing in individuals...(as) understood as an emergent phenomenon of actor-situation transaction” (p. 626). Priestley et al. (2015) defined teacher agency as producing a “vision of teachers as active developers of curriculum” (p. 2) that renders teachers as integral to classroom curricula. Thus, teacher agency as ecological is conceptualized by the literature as “emphasiz(ing) the importance of both agent’s capacity and contextual conditions in shaping agency in which the achievement of agency is seen as a temporal process (Emirbayer and Mische, 1998)” (p. 5). Their conceptualization of agency views classroom curriculum as malleable. If the classroom curriculum is viewed as malleable, then that teacher agency, as my study indicates, is implicated in where and how multimodal literacy learning opportunities may be included in classroom curricula. These opportunities, like agency, involve “the relational resources made available through the networks in which teachers are positioned socially” (p. 18). Agency is “an emergent phenomenon” (p. 6) which is not what “people have” but what “people do” (p. 6). This conceptualization calls for looking at “how individuals are enabled and constrained by their social and material environments” (p. 7). For example, how an educator may be enabled or constrained by a digital technology.

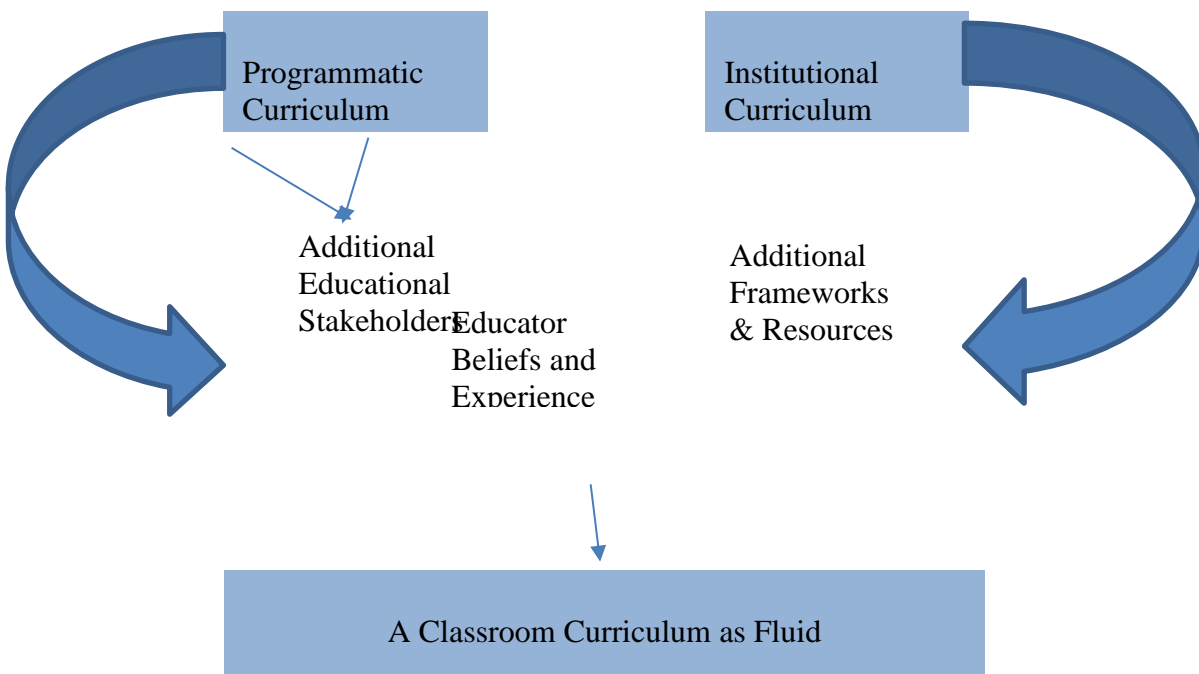
Priestley, Robinson, and Biesta (2011) highlighted that teacher agency as ecological considers “insights into the past experiences and the projective aspirations and views of

agents” (p. 4), such as the educators and children. In this study, these views and experiences influenced student and educator meaning making and teacher agency (e.g., educator decision-making in regards to modal opportunities, children choosing resources to use). The study corroborated the notion “that agency is achieved in the interaction between individuals and contexts rather than being solely about the capacity of actors” (p. 19). In the study, I found opportunities for multimodal literacy amongst interactions between constituents of the classroom curriculum, chief amongst them being the educator. When I viewed semiotic demands within the context of a *classroom curriculum as fluid*, I was able to identify the importance of educators’ choices and the ways in which these choices were located amongst the contexts of the other curricular interactions, such as those between institutional or programmatic and semiotic resources. Context, then, was crucial to semiotic demands confirming Priestley et al.’s argument that, “the importance of context should be taken more seriously by policymakers, as contexts may disable individuals with otherwise high agentic capacity” (p. 19). The study found that the educators demonstrated their agency as an “emerg(ing) phenomenon of the ecological conditions through which it (was) enacted” (Biesta, Priestley, & Robinson, 2017, p. 40). The results reflected Priestley et al.’s (2012) conclusion that, “the experiences and activities of the teachers...provide(d)... insights into the processes by which teachers engage(d) in curriculum making in their classroom, demonstrating how the prescribed curriculum...(was) translated into the enacted curriculum” (pp. 208-9).

Figure 7.1 illustrates how I conceptualized the *classroom curriculum as fluid*. Teacher agency is interconnected with this *classroom curriculum as fluid*. The study found that teacher agency, when conceptualized from an ecological position, influences *how* multimodal pedagogy is constructed. To understand how educators negotiated various curricular levels and how they constructed multimodal literacy learning opportunities, I looked to Handsfield, Crumpler, and Dean (2010) whom discuss literacy practices within the realm of power: “literacy practices and identities (are) co-constructed and discursively mediated within networks of power” (p. 405). I liken these networks of power to the various programmatic and institutional curricula that the educators in the study drew upon, and the power they had to influence the construction of multimodal literacy learning opportunities within the *classroom curriculum as fluid*. Handsfield et al.



(2010) state that there is a “collision between competing ideologies of what counts in literacy instruction, and implicitly recognizes inequitable power relationships with regard to curricular decision making” (p. 405). The results of the study indicate that how multimodal literacy pedagogy and semiotic demands were constructed were likewise built within a collision of what was valued as literacy. This valuing came from various elements that wound up in the classroom curriculum such as the institutional and programmatic curriculum, and the educator’s selections made amongst these frameworks. Thus, the multimodal literacy learning opportunities in the classroom curriculum were created, in part, through teacher agency.



**Figure 7.1. Diagram of a classroom curriculum as fluid.**

The study also found that the role of the material in relation to teacher agency was crucial. To make sense of the data, I consulted literature that explicitly seeks to understand the material in phenomena such as literacy curricula. Socio-material approaches to curriculum, such as the approach outlined by Heydon, Moffatt, and Iannacci (2015), ask that curriculum be viewed as the effect of a complex network of actors of which the material might be primary at various moments. This view of

curriculum and agency come from Actor-network theory (e.g., Latour, 2005). Priestley, Robinson, and Biesta (2011) detail how, citing Archer (2000), a “centrist notion of agency” (p. 2) may not “specify the causal mechanisms that lead to variations in agency, particularly in complex social organisations such as schools” (p. 2). It should be noted that an ecological view of teacher agency means “even if actors have some capacities, whether they can achieve agency depends on the interaction of the capacities and the ecological conditions of their actions” (p. 3). As this study examined how semiotic demands were produced and supported (or not) pedagogically, viewing teacher agency as ecological only may not tell the whole story of how semiotic demands were placed on children.

Likewise, the ecological conditions, may not be able to explicitly provide an explanation for how the human and non-human (i.e., literacy materials) may produce curricula. Results from this study indicate that semiotic demands are not necessarily about how they change across disciplines, but how they were constructed in relation to constituents within the classroom curriculum, how they were contextualized. That is, semiotic demands came from a confluence of curricular constituents within the given situation. Thus, teacher agency is important because it recognizes, for example, the enacted institutional and programmatic curricula, as localized conditions of the ecology. Likewise, viewing teacher agency ecologically accounts for the importance of the material when engaging with a subject such as multimodal literacy. This is why I assert the importance of the material to teacher agency as ecological, within the *classroom curriculum as fluid*.

Teacher agency as ecological is important to the classroom curriculum and the classroom curriculum is important to teacher agency because they are a part of one another. Teacher agency as ecological reveals how actions, like meaning making, may be multiple, complex, and vary according to the specific space the educator occupies as a result of the various interactions of the constituents of the classroom curriculum. Teacher agency reveals how dynamic processes and constituents associated with the classroom curriculum construct multimodal literacy learning opportunities, mitigate the semiotic demands, and reveal how children make meaning. Teacher agency as ecological directly

relates to how multimodal literacy opportunities were constructed by the educators in the study. These opportunities were wrought by the interactions amongst classroom curricula constituents.

I explored agency in relation to the ecological context of the classroom curriculum. I explored agency in this way to understand how educators provided children with multimodal literacy learning opportunities, where semiotic demands may be made by educators and met by the children. Teacher agency involves exploring how educators potentially assemble various elements or actors within the classroom curricula, as well as how these elements or actors are tied to multimodal pedagogy literature. For example, Stein (2000), speaks to representational opportunities that are not only foregrounded in identity, but also the limitations of representations in regards to the pedagogical frameworks at play. Therefore, I discuss the types of multimodal pedagogy presented as they relate to the classroom curriculum so that I can determine and depict how teacher agency helps create multimodal literacy opportunities in a *classroom curriculum as fluid*. It is this theme of agency which I bring into the discussions and conclusions throughout this chapter.

### 7.3 Summary of Findings

This study came from my deeply held belief that children are capable meaning makers. My past experiences, both academic and professional, taught me that it is possible to discuss with the children how they make meaning and how they can expand their meaning making. *How* this may be achieved, is something I continually seek to answer.

Previously, I explored what semiotic theory could look like in practice. This research helped conceptualize how educators could talk to children about their meaning making. Now, within this study, I looked more fully at the supports for children's meaning making within classroom curricula. In this chapter, I discuss the literature in relation to data from each classroom, I examine the findings from each case, and I explore how they relate to one another and teacher agency as understood within educators constructing multimodal literacy learning opportunities for the children.

To ground the chapter, I return to the research questions:

1. What instructional supports are provided for students to meet these demands and with what implications for their communication?
2. In what ways (if at all) do the Ontario programmatic curricula attend to semiotic issues in instructional content and assessment?
3. What modes do educators use in their classroom curriculum?

### 7.3.1 Results of the research questions discussed in chapters 5 and 6

Catherine utilized a wide range of modes in each of the three disciplines she taught. Painting and graphing were not evident in any of disciplines. In Mathematics and Social Studies, I did not observe stylized text or music. I found dance to be absent only in Social Studies. Catherine's pedagogy most often utilized image and speech. Her instructional supports included scaffolding content material during instruction that would be encountered in the activity portion of the lesson and sometimes discussing the modal affordances for image and speech with the children. She connected modes used during assessment and instruction through documentation (e.g., transcribing student conversations). The materials Catherine used in these instances not only represented the documentation practices held within the institutional curriculum (i.e., Reggio), but also enabled the children to communicate the overall assignment expectations.

Laura utilized visual, written, and oral modes in her teaching. Her instructional supports included highly scaffolded modal affordances and constraints for the oral mode, which was co-related to assignment expectations often. Laura often provided instructions using digital resources. Modal supports provided by Laura enabled the children to communicate character motivation and narrative themes associated with the curriculum through vocal intonation.

The Ontario programmatic curricula in the three disciplines attended to issues of semiotics of instructional content and assessment implicitly. Educators were/are asked to scaffold modal opportunities for the children, although the focus was/is on the content

material. Likewise, the children were/are asked by the programmatic curriculum to explore definitions associated with meaning, as presented in the overall and specific objectives. However, how children represent their understanding of their preparedness for assessment is not mentioned explicitly. This may account for why there are modal disparities between disciplines. However, the media literacy strand in the Language document (OME, 2006) explicitly considers semiotics from an instruction and assessment perspective and the Social Studies (OME, 2013a) curriculum document comparatively, uses situated teachings for modal opportunities and is, as written, overtly concerned with developing various types of literacies.

### 7.3.2 Multimodal pedagogy and developing facility to reach agency via resources

In both classrooms, teacher agency influenced how resources were used with and by the children, and how the educators examined modal forms, affordances, and constraints with the children. Educators and children constructed multimodal texts using digital resources in both classrooms, such as iPads in classroom one and netbooks and a digital whiteboard in classroom two. Moreover, in classroom one, Catherine and the children used multiple non digital resources in keeping with the institutional curriculum (e.g., light tables, whiteboards that involved co-curricular constructions such as acting as a space for mathematical and language elements through calendar time). I embedded my examination of resources within multimodal pedagogy concepts (Rowell & Walsh, 2011; Stein & Newfield, 2006).

Rowell and Walsh (2011) and Stein and Newfield (2006) set forth the idea of modes as resources which enable educators and children to represent semiotically. These authors also explore how developing facility with such resources needs to be acquired within each. Within this development of facility lies a need to provide opportunities to understand how resources can be combined to create various meanings. As Stein and Newfield (2006) explain, “Some modes are more effective than other modes for certain kinds of representational work” (pp. 9-10). I used these ideas to understand the interactions amongst educators and children, including how educators and children use resources as opportunities for multimodal literacy learning opportunities and how

educators develop student facility with modes available from these resources. These interactions are described below.

In classroom one, Catherine incorporated modal affordances and constraints implicitly due to the institutional curriculum employed (Reggio Emilia). Catherine's decision to use an implicit focus was relayed during our interview discussions about constructing multimodal literacy learning opportunities. Her understandings of the institutional curriculum, her experiences teaching different grades, her discussions with fellow educators, and the children's interests helped Catherine to define and understand the terms we discussed in the interview. These elements also lead to an ever mutating classroom curriculum. Catherine expressed the need for children to have multimodal literacy options in accordance with the institutional curriculum, and the resources she involved were also based on this curriculum.

At the same time, Catherine articulated that she called on the specialists at the school to help promote multimodality. For example, Catherine used another educator's classroom, the art studio, to contextualize art materials for the children. In these instances, Catherine's agency was built upon her experiences, such as teaching different grades, and interactions with other educators. She also discussed big ideas with the other school educators to be applied to the classroom curriculum and she asked special subject educators such as the art educator how to involve particular modalities. Catherine's interpretation of curricula and her experiences thus informed how she constructed resources and multimodal opportunities.

Catherine used physical resources to enact her reading of the programmatic and institutional curricula. Catherine interpreted the institutional curriculum to inform what modes she could use to make connections to student interest. The learning opportunities with modal affordances were usually implicit in the classroom curricula. However, Catherine, embedded multimodality in subject area content and teaching through resources. For example, Catherine used a picture and gesture of thumbs up and down to represent certainty or impossibility in a study of probability. Catherine also employed materials to support multimodality in the teaching of disciplinary concepts, such as

providing plasticene to children to help them to discover concepts associated with fractions. In these instances, the meaning making purposes of the material were connected to the meaning making purposes of the institutional curriculum. The purpose included providing children with materials to communicate their student-led learning, and these materials were provided by the educator. There was a clear interaction amongst the resource, children, educator, and curriculum.

Teacher agency and material agency were intricately connected within the classroom curriculum. The data related to Catherine suggests that, for her, multimodal pedagogy meant presenting children opportunities to engage with materials and work through different modes with limited or no explicit instruction. What materials, what modes, and how to present them to the children was guided, for Catherine, by institutional curriculum, specifically the ideals of a Reggio inspired school mandate. The pedagogy was implicit; for instance, as described in chapter five, Catherine placed multiple picture books on the floor and encouraged the children to interact with the resource in response to their interests, replicating the student-led and inquiry-based learning encapsulated within the institutional curriculum. Furthermore, the semi-circle seating area in the room provided space for the children to discuss and question materials and their related semiotic practices (e.g., such as ways to count in mathematics). The space enabled the children to see the whiteboard where Catherine affixed items for specific content areas. Certain items Catherine affixed to the whiteboard such as a number chart and calendar were visible to the educator and children at all times, and demonstrated patterns of student meaning making within the class (e.g., colour Catherine used to represent mathematical concepts). The materials Catherine assembled in this space coalesced with her instructions. Catherine, for example, wrote the children's responses on the whiteboard so the children could visualize their meaning making. In these instances, Catherine used her agency and the available resources to situate the children's learning within a student-led space.

I observed Catherine provide children opportunities to examine modal affordances indirectly, primarily through interactions with various materials over various disciplines and instructional times in the classroom curriculum. The children often worked through

their meaning making independently and with their peers. Catherine often reiterated that she avoided explicit instruction to avoid “limiting them” so that children could uncover their meaning for themselves. For example, the children used materials such as a light table, portfolio bins, wooden building blocks, and laminated alphabet cards, which were easily accessible to the children so they could be used for a variety of purposes.

Catherine had interspersed wobbly stools amongst the semi-circular seating for children to sit on. At the same time, some children used this wobbly stool to create props for a play they were writing. Catherine saw it necessary to create opportunities through resources where the children could use various materials to communicate their understanding, in accordance with what worked for the children. In essence, Catherine demonstrated teacher agency through the placement of resources in connection with the institutional curriculum, while at the same time, these materials were intended to provide agency to the children to communicate.

I observed Catherine use assessment to construct agency. She built agency by embedding Reggio practices and by interpreting the institutional curriculum (e.g., hundred languages, and working through material to communicate). For example, Catherine used assessment practices which matched the modal opportunities presented (e.g., recording transcriptions of oral discussions), which were based upon the documentation processes associated with Reggio. I observed that Catherine constructed assessment practices as well to be representative of her goal of student growth. This meant Catherine created assessment which focused on, for example, documenting how the children grew in their comprehension of content material (e.g., how they wrote a story at the beginning of the year, versus at the end of the year). I determined that Catherine’s assessment practices valued children demonstrating their content growth in multimodal ways, but not assessing their growth in multimodal literacy.

The children constructed digital portfolios to share their in-school meaning making with their families. The children created portfolios as a place to materialize the physical renderings of their school work. They also used the portfolios to respond to their work through multiple modes. They could choose how they wished to document their learning. These digital portfolios were an integral example of material agency situated within the



classroom curriculum. Catherine invited the children to use iPads to create the digital portfolios. Children using iPads did not use the same features. Some children added voice recordings, videos, pictures, or drew digitally to add onto the assessment work they were including. The iPad applications the children used provided them with opportunities to be modal designers and to revisit work they had already completed. This resource enabled multimodal collaborations amongst the children within the classroom curriculum. Catherine recognized the portfolio's ability to enable the children's literacies and to document growth and change in their learning.

Catherine placed semiotic demands on the children within their use of resources as they needed to use these modes to show growth. I determined semiotic demands were embedded in Catherine's agency as growth and modal affordances were reflective of the institutional curriculum and her experiences. Thus, Catherine placed resources within a classroom curriculum to implicitly work through the demands of the various curricula and placed semiotic demands on the children during communicative opportunities. I questioned if multimodal pedagogy was evident at this site as Catherine did not wish to provide any explicit affordances or constraints for the modes students, for example, added onto their digital portfolio. I questioned if this scenario would impact assessment as it was unclear if particular modes would be subsequently valued over modes for their representational qualities of growth.

In classroom two, Laura used resources to develop agency that could help children expand their modal literacy. Laura provided explicit modal affordances for specific modes.<sup>10</sup> Laura's classroom curriculum constituted multiple digital resources. As explained in chapter six, I observed that the digital whiteboard played a central role in Laura's interactions with the children. Often the children read in groups or altogether the words placed on the digital whiteboard in accordance with the Shakespearian character Laura provided them (i.e., a character from the play, in this case, *A Midsummer Night's*

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<sup>10</sup> I viewed this program up to two times a week, for three months. Each visit was approximately two hours. Conclusions are based upon observations within this framework.

*Dream* [Burdett, 2017]). I found that each lesson incorporated multiple modes such as text, visuals, and sounds via the *Shakespeare* curriculum slides. Laura offered modal affordances most often for the oral and written mode. I observed a recurring activity, where an oral question and answer period ensued between Laura and the children about what would be happening in a particular slide, where the children would raise their hands to answer questions posed.<sup>11</sup> This particular gesture of raising hands Laura identified and chose how the children could share their understandings of the programmatic curriculum (table 6.2). In effect, the gestural mode became a resource for relaying meaning making through the oral mode.

During choral reading, Laura instructed the children to use their “reading voices”: to use vocal intonation to reflect a specific character or the overall tone of the passage. This activity responded to content material found within the *Shakespeare* curriculum and Ontario curriculum, such as the development of oral communication skills and role play. Laura used music to practice rhythm of saying a choral reading. For example, Laura insisted the children had “to keep to a tempo”, although they could “play around with it a little bit”, like doing “it Beastie Boys style like we’ve done it before” (audio recording, 2017-05-17). Laura also demonstrated what *not* to do by repeating a phrase in monotone so the children were reminded to use “exciting” (audio recording, 2017-02-16) tones. In these instances, Laura provided direct modal affordances to the children for the oral mode, in terms of how they could make meaning in response to the *Shakespeare* curriculum. For example, Laura introduced music to expand on the *Shakespeare* curriculum, relating to the Ontario curriculum where Language objectives included the children using “vocal effects, including tone, pace, pitch” (OME, 2006, p. 95, see chapter 4). Laura used this music to expand on the *Shakespeare* curriculum, contextualize discipline terminology (i.e., music- tempo), and relate various curricular frameworks within this *classroom curriculum as fluid*.

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<sup>11</sup> Laura discussed in an interview about difficulties with displaying the teacher guide on the digital whiteboard due to the size. Post-analysis, I speculated that the question-answer period with the children may have been Laura demonstrating her agency to construct a way to involve these questions, to mend the difficulty of being able to display the questions visually.

Laura decided to not use the specific curriculum supports provided due to the modal constraints of the *Shakespeare* curriculum. She used the digital whiteboard to operationalize this curriculum. Laura demonstrated agency as she chose specific activities associated with this resource. She used other features associated with the digital whiteboard to move outside of the *Shakespeare* curriculum to connect to the internet. Here, Laura used multimodal videos to contextualize words encountered in the curriculum, as the digital whiteboard, in its material agency, afforded her to do so. Laura used the drawing function of the digital whiteboard to display a visual depiction of arrows to further define the relationships amongst the key characters within the programmatic curriculum. Laura's agency in tandem with the resource's agency enabled the children to learn about the *Shakespeare* curriculum through multiple modes. At the same time, although Laura used the digital whiteboard as the focus of the instructional period, this tool was neither used by the children nor utilized for the assessment process. I observed there was a disconnect amongst semiotic demands as the modal affordances attributed to this resource were not carried into the assessment process.

The *Shakespeare* programmatic curriculum focused on writing, and Laura chose to involve different digital technologies for writing because of her experiences with the children over time. It should be noted that by the very fact that this particular classroom curriculum had access to class sets of NetBooks, meant this imposed agency on particular activities (i.e., digital writing). As explained in chapter six, Laura found that the children were losing their writing texts because they were not able to save their writing on the computers and subsequently retrieve the material. Laura moved the writing to an online program where the text would save automatically for the children in order to mediate this problem. Laura explained she had moved to a different digital program because the children could use it.

I observed in these instances that Laura executed her agency by choosing materials in connection with their agency. I also observed that the modal affordances and constraints of the *Shakespeare* curriculum were inextricably linked to the digital resources employed, and not all digital technology and its material agency resulted in positive programmatic curriculum enactments. Laura discussed issues with the teacher guide (see chapter 6)

where digital technology hindered activities (e.g., projecting guiding questions on the digital board). Moreover, Laura provided the children with NetBooks to edit or submit their written assessment. However, the children used the NetBooks to focus on textual elements only, even though they had access to multimodal programs (including the internet).

Laura demonstrated her agency when she provided the children with non-digital resources in the classroom curriculum. For example, Laura asked the children to create a poem using scissors and glue. The children constructed a poem in the order each word (once cut up with scissors) was pulled out of a bag. Laura instructed the children to “add in” grammar to the gibberish to make phrasing which would be appropriate for reading this poem to the other children. I observed that Laura’s instruction enabled the children to explore the modal affordances and constraints of the linguistic mode in connection with their understandings and experiences.

While I observed modal affordances and constraints were connected to certain modes more than others, I observed that content was reinforced through various resources. For example, Laura asked the children to complete a written reproducible from the *Shakespeare* curriculum. Laura also explored with the children this reproducible via an oral question and answer period. Laura also asked the children to only include pictures in the reproducible if all content material had been completed. I observed that, in this decision, Laura placed linguistic semiotic demands on the children and also indicated which modes were valued. Thus, Laura used her agency within the classroom curriculum for the children to construct monomodal rather than multimodal fluency. In classroom one on the other hand, Catherine exposed the children to multiple modes, but did not look towards developing explicit types of multimodal fluency.

In both classrooms, I observed educators and children using resources to access modes. In classroom one these resources included iPads, the whiteboard, picture books, and writing utensils. In classroom two, this included the digital whiteboard. In both classrooms, educators “harness(ed)” (Little, Twiner, & Gillen, 2010, p. 130) these semiotic resources, as they allowed for a “multimodal orchestration of resources” (p.

130). How the educators used these resources within the classroom space was built upon how they interpreted various curricula and how they used resources. The teachers' agency in these interpretations and in how they used resources determined how modal affordances and constraints were relayed to the children.

In both sites I observed that the educators' repetitive use of particular resources meant that the children were exposed to particular modes in specific ways. For example, in classroom two, Laura used the digital whiteboard consistently for choral reading. I may be able to argue that if something is used repeatedly in a particular way, the children begin to understand the value of something implicitly. In both classrooms, the children did use modes and resources featuring modal affordances the educator had not introduced. However, this conclusion may not consider the children choosing modes that work best for them. It is my position therefore that the use of modal affordances to develop student agency should be tied to Jewitt's (2005) definition of a resource. From his approach, when a student chooses "one resource...over another" (p. 312), they must be given the opportunity to do so. Thus, the material agency of these resources and how the educators interacted with these resources impacted how educators presented modal affordances and constraints to the children and how educators constructed semiotic demands.

I concluded that semiotic demands within Language, Mathematics, and Social Studies in classroom one were connected to the institutional curriculum. Catherine placed semiotic demands on the children when they were expected to show "growth" in assessment. She, also placed semiotic demands on children within the documentation practices she used. For example, Catherine expected the children to show growth through materials (multi and mono-modal) used, during the instructional and assessment period. There were instances where Catherine was explicit about connecting the expressive and receptive meaning making expectations, although Catherine frequently forwent modal affordances and constraints due to the belief this would limit the children.

In classroom two, Laura placed semiotic demands on the children that were tied to the *Shakespeare Can Be Fun* program in that she used the resources from the curriculum

material to provide children with modal affordances and constraints. Semiotic demands emerged in instances where Laura invited the children to work through their own meaning making during activities, using modes that Laura did not necessarily introduce during the instructional period (e.g., drawing). This shows that it may be necessary to move away from a highly scaffolded activity. This would better support semiotic demands because it would help children work through the affordances and constraints of the modes with which they are gravitating towards, so they could develop a facility with all modes found within the classroom curriculum.

### 7.3.3 Multimodal pedagogy and expanding communication as a form of agency

In both classrooms, I observed instances where the children expanded their communication practices. However, it was inconsistently related to multimodal pedagogy practices as outlined in the literature. In chapter two, the literature described multimodal pedagogy as a way for the children to develop expanded communication options, using their experiences and discourses in collaboration with modes.

I observed both educators constructed opportunities for the children to expand their communication practices in accordance with their experience and interests. Catherine used her teacher agency to find new ways to enable the children to expand their communication practices. Catherine realized that, due to her previous teaching experiences at the junior level, when she moved to the primary grades, she had to make the decision to change activities from the “verbal and written” (Interview 1, mentioned in chapter 5) as the children were not able to write. This meant Catherine decided to connect literacy practices to the “in the moment” interests of the children to engage them in multimodal practices. For example, Catherine invited children to bring in a collection of something they liked (e.g., stuffed animals), to be used in a criteria activity. I concluded that Catherine afforded the children the opportunity to choose their item in keeping with student-led learning, foundational to the institutional curriculum. Catherine first scaffolded for the children how to judge items based on a set of criteria. Here, Catherine enacted the institutional and programmatic curriculum, as understood by her, impacting

the material agency within this particular activity (i.e., the particular materials the children brought with them into the class).

As each child chose their material, they were only able to create criteria that related to the particular items they brought with them. These varied according to each student. For instance, a student that brought in five red boxes of different shapes would not be able to judge these based upon colour, where a student that brought in five stuffed animals may be able to have criteria inclusive of softness or colour. In this instance, Catherine's understanding of a student-led institutional curriculum, and the enactment of it through this activity, impacted the materials that the children were presented with and how they could present multimodal communication.

Catherine constructed activities, drawing on the institutional curriculum, to demonstrate ecological agency and multimodal literacy learning opportunities. Some children were interested in learning about time, so Catherine provided all children with small clocks which the children were able to move while Catherine explained definitions like hour and minute. In this particular instance, Catherine used student interest and clocks to elicit the emergent curriculum within the institutional curriculum framework. I observed here that within the classroom curriculum's ecology, student interactions with Catherine, experiences of her and the children, and the emergent nature of the institutional curriculum were dissected within this activity to create multimodal literacy learning opportunities.

Similarly, in reading groups, Catherine invited the children to decipher the images of a picture book to determine its plot using their understandings, knowledge, and experience. From these responses, Catherine asked questions to help the children expand their discussions. Finally, Catherine explored with the children the idea of a life cycle. To do so, Catherine drew a concept map on the whiteboard. In the middle of the concept map was the word "cycles". Each time a student shared a connection to this word (e.g., cycle as time, how something is recycled), Catherine drew a spoke and placed a phrase or word on it to represent the student's response. I observed that this multimodal concept map combined written and visual elements (as well as oral elements where the children voiced

their response), and the children were enabled to expand their communication practices as they were able to collectively visualize and consider their peers' understandings of a cycle.

In classroom two, Laura expanded student discussions by contextualizing content presented. For example, Laura explained how she connected an art project she completed with the children to the *Shakespeare* curriculum to contextualize material across the curriculum. Laura's choice to make these connections provided the children with opportunities to expand their communication options, bringing content across various modes. I did not observe the art subject within the study, however, so it was not possible to compare the specific semiotic demands placed across these two subjects.

Laura demonstrated teacher agency through how she used the materials from the classroom to contextualize the Shakespeare curriculum and so that she could achieve literacy outcomes. For example, she used a comedic multimodal video (displayed on the digital whiteboard) to contextualize and modernize an argument read in *A Midsummer Night's Dream* (Burdett, 2017). She did this to expand on what the Shakespeare curriculum materials offered. Laura asked the children to consider their knowledge of fractions and experience with baking to complete a recipe assignment from the programmatic curriculum, which contextualized elements of the Shakespearian play. In these instances, the children expanded their communication practices due to the multimodal supports and scaffolding Laura chose, as well as through the materials provided by the programmatic curriculum. In these instances, Laura used her agency to expand content literacy through modes, drawing on student understanding and interests. I determined that Laura did not use these instances to explicitly expand multimodal literacy and, thus, elements of multimodal pedagogy were present, but they did not include multimodal fluency.

Similar to classroom two, Catherine used multimodal ensembles to expand children's communication options. For example, Catherine showed the children poems written within the figure of the poem's theme (e.g., a poem about a bird in the shape of a bird). Following this, she asked the children to create their own poem. In this instance, each



student created their own multimodal poem without explicit direction about how the grammars of this visual mode could be employed (e.g., colour or shape). Catherine asked the children to also write plays and she showed them examples of scripts. The children expanded on these examples, creating multimodal texts to communicate their meaning making without explicit directions. For example, in one drama group, the children added colour to the script to indicate who would be reading each part. The children as well added drawings to represent the theme of the play. This group of children subsequently borrowed an iPad, wobbly stool, and blanket to enact this play, while other groups were still creating scripts. In this instance, I did not observe Catherine introduce these materials to the children. Yet, children operationalized their own agency because of the material agency of these resources. In these instances, agency and the interactions amongst the constituents of the classroom curriculum were tied to the expansion of multimodal literacy.

In classroom two, children also chose to communicate outside of the modal affordances Laura presented them with. For example, during a writing assignment, Laura invited the children to include pictures only once the written portion of their assignment had been completed. Laura had scaffolded the written portion of their assignment, but she did not provide instructions for their drawings. When I interviewed children, they told me about the characters they created and the various elements they used to represent their characters, such as colour. Similarly, for an oral assignment, children added modes to an assignment by making their own decisions about what types of voices to use in the speech portion of assessment to expand their communication options. I concluded that these instances indicated the children expanded their communication practices and illustrated their agency through their engagement with modal affordances and constraints. They did this even without explicit modal scaffolding. I concluded teacher agency was based upon not only the experiences of the educators and their engagement with the institutional and programmatic curricula, but also upon the material agency of the multimodal texts employed. These interactions impacted how educators presented modal affordances to the children and how the children expanded their communication options. The children were able to expand their communication options to incorporate additional modes from what educators offered.

### 7.3.4 Inclusionary practices: Multimodal pedagogy and the role semiotic demands play on developing agency

I observed that, in each classroom curriculum, the educators incorporated student experience and understanding to deconstruct modes used and content explored. This incorporation meant the educators developed multimodal pedagogy adhering to expanding inclusionary practices. As defined by Ajayi (2008), children are provided space to connect understandings and meaning making to the literacy curriculum through diverse modes.

For example, in classroom one, Catherine invited the children to include modal representations of their identity throughout their activities. In their levelled reading groups, the children pointed out what they noticed within the story and added onto the narrative through their imagination, making connections to their understandings (e.g., the concept of gravity). Similarly, Catherine provided the children with the freedom to draw pictures of themselves on the iPads. I also observed that the semi-circle seating enabled the children to share their understandings during mathematics. For example, the children shared how they each arrived at their answers, and Catherine responded by drawing on the whiteboard to visualize their thought processes. In each of these instances, Catherine developed, in interactions with the classroom curriculum constituents, ways to embed student identity, experiences, and interests. So, the children interacted with modes in collaboration with their identity, understanding, and experiences.

In classroom two, Laura used modes to work through programmatic objectives, contextualizing these objectives via student interest and experience. For example, Laura talked with students to dissect word meaning for the children (from the play) using synonyms from Modern English, including scenarios relevant and interesting for the children (e.g., relating the word *revel* to parties they may take part in). Similarly, Laura dissected the children's written love potion assignment by incorporating their experiences. She asked the children to consider baking they would do at home to understand how to write instructions, and gather measurements to complete such a task.

Laura consistently reminded the children of popular culture to make sense of tasks. For example, the children re-arranged the words for a poem assignment so the syntax related to the order the words were pulled from the bag. Laura asked the children to add grammar to identify phrasing for their oral presentations, which were to take place at the back carpet. At the back carpet, a particular student recognized their word order as akin to the Star Wars character Yoda, and used the character's vocal tone to bring attention to the particular syntax. Laura recognized this and said, "I think your subconscious channeled a little bit of Yoda there" (audio recording, 2017-02-24). Here, Laura deconstructed the programmatic content from student experience and understandings to mediate semiotic demands. Laura told the children to read the poems as they understood the phrasing, providing the children with the agency to use their voice as a semiotic resource, and this activity was based upon the programmatic curriculum. As such, Laura constructed inclusionary practices via a "bringing in" of student experience to dissect the material (or, in the case of this research study, the *classroom curriculum as fluid*). Laura constructed these opportunities in response to the constituents of the classroom curriculum. Thus, in both classrooms, the *classroom curriculum as fluid* exhibited multimodal pedagogy and its inclusionary practices as defined by the literature, as both educators included practices "in which students' histories, identities, cultures, languages and discourses (could) be made visible" (Stein and Newfield, 2006, p. 11, as found in chapter 2).

## 7.4 Summary of Key Findings

I determined that multimodal literacy learning opportunities and semiotic demands in classroom curricula operate through a much more complex system than I originally considered (i.e., cross curriculum), with teacher agency as ecological operating at the helm of how multimodal pedagogy and supports are provided. When I consider Stein's (2008) assumptions detailed in chapter two, each classroom curriculum presented only certain concepts. For example, in classroom one I observed aspects 1, 3, 7 whereas in classroom two I observed aspects 1, 2, 3, 4. In classroom one, Catherine used modes in instruction and assessment that were responsive to student interests and needs. Often, Catherine asked the children to make meaning through multiple modes, without explicit

affordances and constraints, and the children received receptive meaning making expectations through oral, written, and visual modes.

In classroom two, I observed modes that were reflective of those found in the programmatic curriculum documents. At the same time, I found that Laura provided modal affordances for specific modes only. In classroom two, Laura placed oral and written semiotic demands on the children (as outlined in chapter six), both for the instructional and assessment portion of the lesson.

Occasionally, modal expectations did not match. As could be seen in chapter six, Laura used oral instructions to support the children in meeting vocal semiotic demands. Laura included scaffolding what vocal intonations could sound like, reminding the children of the motivation of their characters, and using music so that the children could practice rhythmic speaking. The children also practiced choral reading regularly, and Laura informed them about their use of hands to enable sharing of knowledge. I observed therefore that the classroom curriculum at site two included modal affordances for specific modes.

In classroom one, as could be seen in chapter five, Catherine's scaffolding and leading questions meant the children met demands. For example, Catherine asked clarifying questions of the children after they provided Catherine their opinions on what was happening in the story in accordance with the front cover. Likewise, Catherine asked the children questions about their mathematical formulas after she wrote them out on the board, to clarify the children's discoveries. I observed that the children became engaged and enthusiastic, looking to explore further considerations, questions, and various modalities within their meaning making.

As I examined previously, this classroom curriculum included implicit modal affordances/constraints, and I concluded that the children potentially did not have the foundation to display their growth in modal fluency. However, this study's purpose was not to determine if one educator provided more multimodal literacy learning opportunities than the other. Rather, the study's purpose was to determine how educators provided multimodal literacy learning opportunities to the children.

Overall, the study found that there was a multiplicity and fluidity attached to the classroom curriculum, which was not bounded by the physical classroom space. The study also found that teacher agency (as ecological) impacted how the children were presented with multimodal literacy learning opportunities. The interactions amongst the children, educators, and materials highlighted connections between these opportunities and agency. The *classroom curriculum as fluid* and an ecological understanding of teacher agency illustrated semiotic demands placed on the children, focusing on modal affordances and modal designing, as well as integrating various curricula. I thus question: if semiotic demands placed on the children emerged from this *classroom curriculum as fluid*, how does the educator interpret the curricular supports they are drawing upon within the classroom curriculum as observed? How do educators use, value, and interpret the concepts and definitions associated with curricula used? These questions are the foundation for the subsequent recommendations for how multimodal literacy pedagogy may be developed or constructed in elementary classroom curricula.

## 7.5 Recommendations

I present the following recommendations in relation to the study findings which may be used by educational stakeholders, to infuse multimodal literacy pedagogy within current educational practices, including but not limited to elementary educators, policy, and curriculum writers.

### 7.5.1 Meaning making in relation to curriculum content, constructed in a purposeful way

This study began from my recognition of the significance of pedagogies that attend to the role of semiotics in teaching and learning, and to the potential of multimodal pedagogy to support children's meaning making across the classroom curriculum. The study aimed to bring recognition to the semiotic demands placed on the children across the curriculum. Catherine, for example, did see that "semiotic based practices" could "be beneficial to teachers" (Interview 3). It is my position therefore that, in a *classroom curriculum as fluid*, it is important that educational stakeholders consider how to create opportunities

for the children to construct meaning in purposeful ways because of the many constituents at play.

To do so, I suggest recommendations that work for curricula operationalizing at the local level, acknowledging each classroom curriculum is different because of the materials, the various curricular frameworks employed, the educator and the children, and their interactions. I believe, to make meaning within the *classroom curriculum as fluid*, is not about whether or not multimodal literacy pedagogy is evident.<sup>12</sup> Rather, it is about educational stakeholders utilizing the classroom curriculum constituents to construct meaning making opportunities, and modal fluency. Thus, it is necessary to explore how multimodal pedagogy can consider all curricular frameworks: institutional and programmatic, and across the curriculum. It is also necessary to consider how multimodal pedagogy may be inclusive of the educational stakeholder'(s)' choices.

Thus, I provide two recommendations to reconsider the ways in which educators may approach the supports they are provided to create multimodal literacy learning opportunities.

1. My first recommendation is for educational stakeholders to develop student knowledge of modal affordances and constraints within the context of the classroom curriculum, there needs to be ongoing, planned experiences for the children with these modes in various disciplines. These experiences provide children with opportunities to learn how these modal affordances are situated and contextualized within the classroom practices, including the interactions amongst educator and children, materials, and frameworks, as well as how modes may vary across disciplines or assessment. This is possible even if modal affordances are not explicit.

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<sup>12</sup> The word evident is used in terms of how multimodal literacy pedagogy is described in the literature reviewed. Please see chapter two.

2. I recommended<sup>13</sup> that educational stakeholders introduce metalanguage<sup>14</sup> 1) to alleviate the aspects of multimodal literacy pedagogy that may not work with supports available<sup>15</sup> 2) that is broad enough to work with curriculum currently employed (e.g., the programmatic curriculum) 3) that includes multimodal pedagogy, yet is broad enough to reflect that each *classroom curriculum as fluid* may gain access to various resources and may have different curricular frameworks interacting 4) that includes terminology that allows children to work through their developing modal use without interrupting the philosophical movements at play (e.g., student-led learning) or the resources at play (e.g., technology and its enactment).

### 7.5.2 Meaning making in relation to student knowledge, constructed in a purposeful way

Whenever and wherever educators provide meaning making opportunities using agency, they also have the agency to decide that multimodal pedagogy is not the means to reach these teaching “goals”. I thus question: how and why might educators value exploring modes with children? In classroom one, Catherine valued using modes, but did not value modal affordances/constraints. In classroom two, Laura valued specific modal affordances but she did not necessarily develop matching modes or multiple types of modes.

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<sup>13</sup> Cope and Kalantzis (2009) and New London Group (1996) offered modal terms, reiterated in chapter 4, nine and twenty-two years ago, respectively. It is uncertain why educational stakeholders have not taken up these terms after all this time. However, it is clear from this study that enacting curricular frameworks, philosophies, and so forth, are done so at the local (classroom curricula) level.

<sup>14</sup> I connect metalanguage to teacher agency as “an important resource with regard to their achievement of agency” (Biesta et al., 2017, p. 51). I do so in that a metalanguage involves utilizing specific language “which allow teachers to make sense of the situations they are in...shape their expectations and ambitions” (p. 40).

<sup>15</sup> Educational stakeholders may apply terms from current frameworks through the search function to documents being used (e.g., assessment, curricular) to provide cognizance surrounding which modes are already used in such documents, and which assessment and instructional pieces may be connected with one another to alleviate semiotic tensions.

An explicit conversation needs to emerge between children and educators to develop multimodal literacy pedagogy. How educators support children in their meaning making so that they develop a facility with modes needs to consider various knowledge to construct meaning in a purposeful way. I recommend the following three recommendations to offer ways in which this may be realized:

1. Educators should consider using assessment that reflects modal opportunities presented. They should incorporate explicit instruction about modal affordances and constraints to children so that they meet semiotic demands. Another option for educators may be that they determine how children are developing in their agency of using modes.<sup>16</sup> This recommendation draws on Green and Beavis (2013). They described creating opportunities for children to learn how to design with technology as a way to “develop a repertoire of capabilities in terms of both mode and medium” (p. 44).
2. Educational stakeholders may create curricular documents which offer explicit examples of how they can construct and convey meaning that helps them to consider modal affordances and constraints. New documents may support children by ensuring that they connect their descriptions for expressive and receptive meaning making expectations. I suggest that it is imperative to consider how meaning is constructed in curricular documents so that stakeholders may better understand how children may construct meaning in a purposeful way. Educators may examine each curricular or assessment document utilized within the *classroom curriculum as fluid* in terms of how meaning making is constructed across these documents.
3. Educators may use children’s collective experiences (not just amongst the individual student) to help create meanings that are contextualized locally for

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<sup>16</sup> What became evident within the study was the children, in both classrooms, could explicitly communicate (during interviews) his/her purposes for their adoption of specific semiotic resources. However, these were not necessarily what had been covered during the instructional period. And thus, with responsibility placed on those choosing and representing resources (teachers or children), Stein and Newfield (2007) suggested “meaning making is constantly in flux as learners make signs in response to other signs in a never-ending relation of initiation and responsiveness” (p. 920).



the classroom curriculum and for assessment. Educators may use resources to represent these collective understandings (e.g., a dry whiteboard where the educator writes student responses, as used in classroom 1), which may help in situations where modal affordances and constraints are implicit.

4. Educational stakeholders should consider multimodal resources that are non-digital and digital because they both have the potential to access multiple modes. If educators use different types of multimodal resources, it may provide children expansive multimodal literacy learning opportunities through exploring modal affordances and constraints. I provide this recommendation because I believe that inclusive multimodal literacy pedagogy should include all educators and the supports they employ or have access to.<sup>17</sup> When educational stakeholders are selecting resources, they should consider whether they may elicit multiple modes. Educational stakeholders should also consider if these resources may be combined to create multimodal activities, in order to provide opportunities to make meaning in multiple ways.<sup>18</sup> Educational stakeholders may help to alleviate semiotic tensions by using resources that are reflected in both the instructional and assessment periods. Stakeholders will help examine modal affordances by offering children to become familiar with the resources and the content material. For example, an educator who works with children to explore how they may use a digital tablet to access the camera or voice recording elements. Children may receive practice opportunities with these resources if they are connected to student knowledge, experience, and understandings. This connection can help educators assess which modal affordances and constraints children already

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<sup>17</sup> Both classrooms in this research study contained multiple digital resources, and these resources indicated the advent of increasing modal complexity within classrooms. At the same time, not all classrooms have access to such digital resources. I introduce this postulate therefore to be inclusive of all educators working to develop inclusionary practices that consider semiotic demands.

<sup>18</sup> It should be noted, meaning making by educators and children may also be made with individual modes.

attribute to these resources. The connection may also help to understand the literacies located outside the classroom which connect to these resources.

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# Appendices

## Appendix A 1 Approval Notice for Site 1



Western  
Research

Western University Non-Medical Research Ethics Board  
NMREB Delegated Initial Approval Notice

Principal Investigator: Dr. Rachel Heydon  
Department & Institution: Education/Faculty of Education, Western University

NMREB File Number:  
Study Title: But what do YOU mean?: A multiple case study of the semiotic demands and supports in elementary classroom curricula

NMREB Initial Approval Date: March 11, 2016  
NMREB Expiry Date: March 11, 2017

**Documents Approved and/or Received for Information:**

Document Name	Comments	Version Date
Other	photographic release form	2016/02/02
Letter of Information & Consent	letter of information teacher	2016/02/02
Assent	letter of assent	2016/02/02
Recruitment Items		2016/03/02
Instruments	Interview Questions	2016/03/02
Western University Protocol	Received March 7, 2016	
Letter of Information & Consent	Parent/Guardian	2016/03/07

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

\_\_\_\_\_  
Ethics Officer, on behalf of Dr. Ritley Hinson, NMREB Chair or delegated board member

Ethics Officer to Contact for Further Information: Erika Basile \_\_\_ Nicole Kaniki \_\_\_ Grace Kelly \_\_\_ Katelyn Harris \_\_\_ Vikki Tran  \_\_\_

*This is an official document. Please retain a copy for your files.*

Western University, Research, Support Services Bldg., \_\_\_\_\_

## Appendix B 1 Letter of Information and Consent for Educator Participant at Site 1



### Appendix A: Letter of Information and Consent - Teacher

**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Teacher

**Supervisor of PhD Candidate (Principal Investigator):** Dr. Rachel Heydon, PhD, Education, Western University, [REDACTED]

**PhD Candidate Conducting Study (Co-Investigator):** Emma Cooper, Education, Western University, [REDACTED]

### Invitation to Participate

You are being invited to participate in this research study for the purposes of exploring the ways that students make meaning in the classroom and how they can be supported to do so. You are invited to participate because you are an elementary teacher who currently teaches in a primary/junior classroom (grades 1,2, 4 or 5).

### Why is this study being done?

The purpose of this study is to explore the ways that children are asked to make meaning during instruction and assessment periods in the Language Arts, Mathematics and Social Studies lessons that you teach and how teachers can be supported to assess the semiotic demands of the programmatic and classroom curriculum on students and provide commensurate supports to them. The research aims to create new knowledge about how teachers can foster inclusive classrooms where all students are supported to make meaning across the curriculum.

### How long will you be in this study?

It is expected that you will be in the study for up to four months, for up to two days a week. The study will take place during the regular school days as you deliver the normal Ontario provincial curriculum for your grade. Emma Cooper will visit the classroom to observe the classroom over the course of up to 30 study visits during your participation in this study and each visit will take up to two hours (depending on the lessons scheduled for the day). There will be no time commitments expected outside of the time you spend teaching except for the three interactive conversational interviews (beginning, middle and end of the study), to be scheduled at your convenience, and each will take approximately one hour. During this time, you and Emma Cooper will discuss how to identify and assess semiotic demands placed on students and how teaching and assessment can be supportive to students in living up to these demands.

### What are the study procedures?

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Western University, Faculty of Education



If you agree to participate you will be asked to have data collected from you via interview tapes, transcripts and assessment examples during the regular school day as you deliver the curriculum. On the first visit, Emma Cooper will arrange a time with you to complete the first interview (and schedule potential dates for the second and third interview) and collect consent letters of you and the students. During each visit (including the first visit), audio recordings will be taken of the Language Arts, Mathematics, and Social Studies instructional periods. Photographs will be taken of the classroom environment, instructional periods and student work; no photos will be taken of you or your students' faces (i.e., behind the head only or a picture of a hand to show a gesture [non-identifiable]). During the activity portion of the instructional period, the researcher will ask students about what they are doing, learning or creating and ask to collect assessment examples from you. Consent will be obtained from children as well as guardians prior to the beginning of the study. If there is a child or guardian who does not provide consent, no data will be gathered about this child. All study visits including the interview will take place in your classroom. If you do not wish to be audio recorded, you are not eligible to participate in this study.

**What are the risks and harms of participating in this study?**

There are no known or anticipated risks or discomforts associated with participating in this study

**What are the benefits of participating in this study?**

The possible benefits to participants may be an increased awareness about meaning making opportunities and how to connect modes used during instructional periods and within assessments used.

**Can participants choose to leave the study?**

If you decide to withdraw from the study, you have the right to request withdrawal of information collected about you. If you wish to have your information removed, please let the researcher know.

**How will participants' information be kept confidential?**

All data collected will remain confidential and accessible only to the investigators of this study. If data is collected during the project, which may be required to report by law, we have a duty to report. If you choose to withdraw from this study, any data pertaining to you will be removed and destroyed from our database. You may ask any questions you have before, during, and after the study. If the results are published in books and journals, pseudonyms will be used in place of names. The research data and recordings will be kept for the next five years in a secure, password-protected location at Western University. Only members of the research team will have access to the research data.



Representatives of The University of Western Ontario Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research.

**Are participants compensated to be in this study?**

You will not be compensated for your participation in this research.

**What are the rights of participants?**

Your participation in this study is voluntary. You may decide not to be in this study. Even if you consent to participate, you have the right to not answer individual questions or to withdraw from the study at any time. If you choose not to participate or to leave the study at any time it will have no effect on your employment.

We will give you new information that is learned during the study that might affect your decision to stay in the study.

You do not waive any legal right by signing this consent form.

**Whom do participants contact for questions?**

If you have any questions about this research study please contact Principal Investigator: Dr. Rachel Heydon [REDACTED], email: [REDACTED]. If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics [REDACTED], email: [REDACTED].

*\*This letter is yours to keep for future reference.\**

**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Teacher

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Western University, Faculty of Education



**Principal Investigator:** Dr. Rachel Heydon, Faculty of Education, Western University  
**Co-Investigator:** Emma Cooper, PhD Candidate, Faculty of Education, Western University

Consent Form

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

Participant's Name (please print):

\_\_\_\_\_

Participant's Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

Person Obtaining Informed Consent (please print):

\_\_\_\_\_

Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

I consent to the use of unidentifiable photographs obtained during the study in the dissemination of this research.

YES  NO

I consent to the use of unidentified quotes obtained during the study in the dissemination of this research.

YES  NO



## Appendix C 1 Letter of Information and Consent for Parent/Guardian at Site 1



**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Parent/Guardian

**Supervisor of PhD Candidate (Principal Investigator):** Dr. Rachel Heydon, PhD, Education, Western University, [REDACTED]

**PhD Candidate Conducting Study (Co-Investigator):** Emma Cooper, Education, Western University, [REDACTED]

### **Invitation to Participate**

Your child is being invited to participate in this research study for the purposes of exploring the ways that students make meaning in the classroom and how they are supported to do so. Your child is being invited to participate because their elementary teacher is a participant in this study.

### **Why is this study being done?**

The purpose of this study is to explore the classroom multimodal literacy curriculum that is produced during instruction and assessment periods in the Language Arts, Mathematics and Social Science lessons that are taught. The research aims to create new knowledge about how teachers can foster inclusive classrooms where all students are supported to make meaning across the curriculum.

### **How long will your child be in this study?**

The study will take place during your child's normal school day and will not alter it in anyway. I will be in the classroom observing for up to four months, up to two days a week. There will be up to 30 study visits during the study and each visit will take approximately up to two hours.

### **What are the study procedures?**

If you agree for your child to participate, you are agreeing that data collected from your child during the time they are in school being taught by their teacher, via written notes and photographs of their work (without any name visible) be used in the study. You will also be asked to read the letter of assent to your child to obtain consent from your child as well. My role in the classroom is to encourage children to communicate about the meaning they are gathering or producing; I am not talking to children to guide them or promote anything. As I am a primary/junior teacher, students may approach me like another teacher in the classroom. An envelope has been provided with this letter of information and the assent letter, so that it may be used to return the consent forms in, whether or not you consent to your child participating in the study. During each visit (including the first visit), audio recordings will be taken of the Language Arts, Mathematics, and Social Studies instructional periods. Photographs will be taken of the



classroom environment, instructional periods and student work (without names visible); no photos will be taken of the students' faces (i.e., behind the head only or a picture of a hand to show a gesture [non-identifiable]). During the activity portion of the instructional period, the researcher will ask students about what they are doing, learning or creating. If there is a child or guardian who does not provide consent, no data will be gathered about this child. All study visits will take place in the classroom.

**What are the risks and harms of participating in this study?**

There are no known or anticipated risks or discomforts associated with your child participating in this study.

**What are the benefits of participating in this study?**

There are no known possible benefits to your child participating in the study but benefits to society may include an increased awareness about meaning making opportunities in the classroom.

**Can participants choose to leave the study?**

If you decide to withdraw your child from the study, you have the right to request withdrawal of information collected about them. If you wish to have their information removed, please let the researcher know.

**How will participants' information be kept confidential?**

All data collected will remain confidential and accessible only to the investigators of this study. If data is collected during the project, which may be required to report by law, we have a duty to report. If you choose to withdraw your child from this study, any data pertaining to them will be removed and destroyed from our database. You may ask any questions you have before, during, and after the study. If the results are published in books and journals, pseudonyms will be used in place of names. The research data and recordings will be kept for the next five years in a secure, password-protected location at Western University. Only members of the research team will have access to the research data. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may require access to your child's study-related records to monitor the conduct of the research.

**Are participants compensated to be in this study?**

You and your child will not be compensated for their participation in this research.

**What are the rights of participants?**

Your child's participation in this study is voluntary. You may decide for your child to not be in this study. Even if you consent to participate, you have the right for your child to not answer individual questions or to withdraw from the study at any time. If you choose



for your child not to participate or to leave the study at any time it will have no effect on their care.

We will give you new information that is learned during the study that might affect your decision to allow your child to stay in the study.

You do not waive any legal right by signing this consent form.

**Whom do participants contact for questions?**

If you have any questions about this research study please contact Principal Investigator: Dr. Rachel Heydon [REDACTED], email: [REDACTED]. If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics [REDACTED], email: [REDACTED].

*\*This letter is yours to keep for future reference.*



**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Parent/Guardian

**Principal Investigator:** Dr. Rachel Heydon, Faculty of Education, Western University

**Co-Investigator:** Emma Cooper, PhD Candidate, Faculty of Education, Western University

Consent Form

No, I do not consent for my child to participate in this study.

Yes, I consent for my child to participate in this study.

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

Child Participant’s Name (please print):

\_\_\_\_\_

Parent/Guardian Name (please print):

\_\_\_\_\_

Parent/Guardian’s Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

Person Obtaining Consent (please print):

\_\_\_\_\_

Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_





I consent to the use of my child's unidentifiable photographs obtained during the study in the dissemination of this research.

YES  NO

I consent to the use of my child's unidentified quotes obtained during the study in the dissemination of this research.

YES  NO

## Appendix D 1 Photographic Release for Parent/Guardians at Site 1



### Parent/Guardian Photographic Release Form

But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

I agree to have non-identifiable photographs of my child, my child's environment and property used in the following ways (please check all that apply):

- |                                  |                              |                             |
|----------------------------------|------------------------------|-----------------------------|
| In academic articles             | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In print, digital and slide form | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In academic presentations        | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In media                         | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In thesis materials              | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Name of Child Participant: \_\_\_\_\_ (please print)

Name of Parent/Guardian: \_\_\_\_\_ (please print)

Signature of Parent/Guardian: \_\_\_\_\_ (please print)

Date: \_\_\_\_\_

Person Obtaining Consent: \_\_\_\_\_ (please print)

Signature of Person Obtaining Consent: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix E 1 Assent Letter for Site 1



**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Student

**Supervisor of PhD Candidate (Principal Investigator):** Dr. Rachel Heydon, PhD, Education, Western University, [REDACTED]

**PhD Candidate Conducting Study (Co-Investigator):** Emma Cooper, Education, Western University, [REDACTED]

### Assent Letter

**1. Why are you here?**

Ms. Cooper is inviting you to be in a study that will look at the ways your teachers talk to you about your assignments. She wants to see if you would like to be in this study.

**2. Why are they doing this study?**

Ms. Cooper wants to find a way to help your teachers understand how you learn about what you are taught and how they can teach you many ways to tell them about what you are learning.

**3. What will happen to you?**

If you want to be in the study, two things will happen during your regular school day.

1. Ms. Cooper will ask you about what you're learning or making.
2. You will see Ms. Cooper take notes and talk to your teachers.

**4. Will there be any tests?**

No, there will not be any tests or marks on the report card from this study. Ms. Cooper will not give you a grade for any of the work you do.

**5. Will the study help you?**

This study will not help you directly, but in the future, it might help children learn how to show and talk about what they are learning.

**6. Do you have to be in the study?**

You do not have to be in the study. No one will be mad at you if you do not want to do this. If you do not want to be in the study, tell Ms. Cooper or your parents. Even if you say yes, you can change your mind later. It is up to you. If you don't want to be in the study, Ms. Cooper just won't write about you.

**7. What if you have any questions?**

You can ask any questions at any time, now or later. You can ask Ms. Cooper questions at any time while she's in the classroom. You can talk to your teachers, family or someone else about the study too.

---

**This letter is for you to keep.**



**8. Consent**

**I want to participate in this study.**

**Print Name of Child (child to print their own name)** \_\_\_\_\_

**Date** \_\_\_\_\_

**Age** \_\_\_\_\_

**Name of Person Obtaining Consent** \_\_\_\_\_

**Signature of Person Obtaining Consent** \_\_\_\_\_



## Appendix F 1 Letter of Information and Consent for Adult Bystanders at Site 1



### Letter of Information and Consent - Bystander

**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Bystander

**Supervisor of PhD Candidate (Principal Investigator):** Dr. Rachel Heydon, PhD, Education, Western University, [REDACTED]

**PhD Candidate Conducting Study (Co-Investigator):** Emma Cooper, Education, Western University, [REDACTED]

### Invitation to Participate

You are being invited to participate in this research study as a bystander for the purposes of exploring the ways that students make meaning in the classroom and how they can be supported to do so.

### Why is this study being done?

The purpose of this study is to explore the ways that children are asked to make meaning during instruction and assessment periods in the Language Arts, Mathematics and Social Studies lessons that is being taught and how teachers can be supported to assess the semiotic demands of the programmatic and classroom curriculum on students and provide commensurate supports to them. The research aims to create new knowledge about how teachers can foster inclusive classrooms where all students are supported to make meaning across the curriculum.

### What are the study procedures?

Emma Cooper will be in the classroom collecting data via assessment examples, teacher interviews and transcripts, and audio recordings and field notes of the Language Arts, Mathematics, and Social Studies instructional periods. Non-identifiable photographs will be taken of the classroom environment, instructional periods, and student work. But, volunteers or co-op students that come into the camera's view during the day while interacting with students or the teacher will be free to agree or not to having non-identifiable photos taken of them. Similarly, volunteers or co-op students that are involved in conversations between participants involved in the study will be free to agree or not to having non-identified quotes taken of them.

### What are the risks and harms of participating in this study?

There are no known or anticipated risks or discomforts associated with participating in this study as a bystander.



**What are the benefits of participating in this study as a bystander?**

You may not directly benefit from participating as a bystander in this study but information gathered may provide benefits to participants in terms of an increased awareness about meaning making opportunities and how to connect modes used during instructional periods and within assessments used.

**How will bystanders' information be kept confidential?**

All data collected will remain confidential and accessible only to the investigators of this study. If data is collected during the project, which may be required to report by law, we have a duty to report. If you choose to withdraw from this study as a bystander, any data pertaining to you will be removed and destroyed from our database. You may ask any questions you have before, during, and after the study. If the results are published in books and journals, pseudonyms will be used in place of names. The research data and recordings will be kept for the next five years in a secure, password-protected location at Western University. Only members of the research team will have access to the research data. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research.

**Are bystanders compensated to be in this study?**

You will not be compensated for your participation as a bystander in this research.

**What are the rights of bystanders?**

Your participation as a bystander in this study is voluntary. You may decide not to be in this study. Even if you consent to participate as a bystander, you have the right to withdraw from the study as a bystander at any time. If you choose not to participate as a bystander or to leave the study at any time it will have no effect on your employment or volunteer status. If you do not provide consent, no non-identifiable photos or quotes will be taken of you. In the off-chance that this does occur, the data will be deleted.

We will give you new information that is learned during the study that might affect your decision to stay in the study as a bystander.

You do not waive any legal right by signing this consent form.

**Whom do bystanders contact for questions?**

If you have any questions about this research study please contact Principal Investigator: Dr. Rachel Heydon [REDACTED]; [REDACTED]. If you have any questions about your rights as a bystander or the conduct of this study, you may contact The Office of Research Ethics [REDACTED], email: [REDACTED].



*\*This letter is yours to keep for future reference.\**



**Project Title:** But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

**Document Title:** Letter of Information and Consent- Bystander

**Principal Investigator:** Dr. Rachel Heydon, Faculty of Education, Western University

**Co-Investigator:** Emma Cooper, PhD Candidate, Faculty of Education, Western University

Consent Form

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate as a bystander. All questions have been answered to my satisfaction.

Bystander's Name (please print):

\_\_\_\_\_

Bystander's Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

Person Obtaining Informed Consent (please print):

\_\_\_\_\_

Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

I consent to the use of unidentifiable photographs obtained during the study in the dissemination of this research on the understanding that my activities are not going to be the focus of the research or analyzed by the researchers.

YES  NO



I consent to the use of unidentified quotes obtained during the study in the dissemination of this research on the understanding that my activities are not going to be the focus of the research or analyzed by the researchers.

YES  NO

## Appendix G 1 Photographic Release for Adult Bystanders at Site 1



### Bystander Photographic Release Form

But what do YOU mean? : A multiple case study of the semiotic demands and supports in elementary classroom curricula

I agree to have non-identifiable photographs of me, my environment and property used in the following ways (please check all that apply):

- |                                  |                              |                             |
|----------------------------------|------------------------------|-----------------------------|
| In academic articles             | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In print, digital and slide form | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In academic presentations        | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In media                         | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| In thesis materials              | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Name of Bystander: \_\_\_\_\_ (please print)

Signature of Bystander: \_\_\_\_\_ (please print)

Date: \_\_\_\_\_

Person Obtaining Consent: \_\_\_\_\_ (please print)

Signature of Person Obtaining Consent: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix H 1 Principal Script for Site 1



Subject Line: Invitation to participate in research

After receiving ethical clearance from XXX (school board), your teachers are being invited to participate in a study that I, Emma Cooper, am conducting. Briefly, the study involves exploring when a teacher is explicitly trying to create opportunities for students to make meaning, as well as how they connect modes used during the instructional period to assessment strategies employed. A checklist has been provided to indicate the kinds of participants being looked for. If the teacher would like more information about this study please contact the researcher Emma Cooper at the contact information given below.

Research will take place for up to two days a week for up to four months during the instructional periods of Language Arts, Mathematics, and Social Studies. Interviews will be conducted throughout the study at the teacher's convenience.

If you would like more information on this study, a letter of information has been attached. In accordance with Western University's policies, no school, or potential participants (teachers, students, parents) are obligated to take part in the study. For the principal, if interested, please forward this email and letter of information to your teachers and use the contact information below to make arrangements at your convenience to set up a meeting to ensure minimal interruptions will take place.

Thank you,

Co-Investigator: Emma Cooper  
PhD Candidate Conducting Study  
Western University

Principal Investigator: Dr. Rachel Heydon  
Professor, Supervisor of PhD Candidate  
Western University

### Participant Selection Criteria

As a teacher who is trying to address issues of assessment and instruction with educators through multimodal pedagogy, this teacher will be or have:

- ✓ Current elementary teacher (teaches in a primary (grade 1-2)/ junior (grade 4-5) classroom)
- ✓ Interest in taking part in a study which focuses on multimodal pedagogy (that is, ways of communicating, learning, and teaching that bring together various modes of print, image, gesture, animation, music, and the like)
- ✓ Interest in taking part in a study which focuses on semiotics (drawing students' attention to their meaning making practices)

Western University, Faculty of Education

## Appendix I 1 Data Collection Instruments for Site 1

### Appendix F – Interview Protocol- Initial Contact Interview- Teachers-

#### OPENING

- ✓ Hello, my name is Emma Cooper. I am a graduate student at the University of Western Ontario, currently enrolled in the Doctor of Philosophy program in Education studies. I am exploring meaning making and multimodal pedagogy in classrooms (that is, ways of communicating, learning, and teaching that bring together various modes of print, image, gesture, animation, music, and the like) to explore instructional supports in place to assist students with their assessment.
- A. I am planning to ask you questions about your background education and experiences you have had, as they relate to the project. Per the consent for you signed earlier, you may end this interview at any time, and may decline to answer any questions.
- B. The content of this interview will be used for my dissertation, which includes a final paper, presentation of my findings, and publishing the paper. The tape recording of this interview will be destroyed after 5 years. It will be kept on a network drive so as to keep all information confidential. You are most welcome to a copy of my interview notes and transcription and may request a copy at any time by contacting me, the researcher.
- C. The interview should take about 1 hour. Are you available to respond to the questions at this time?

#### BODY

##### Background:

- A. Please talk to me about your background and experience in:
  - 1) Education
  - 2) The courses/subjects/grades you teach
  - 3) Teaching or knowledge about semiotics (meaning making)
  - 4) Teaching or knowledge about multimodal pedagogy
- B. How do you think the courses you teach or the work you do, reflect semiotics or multimodal pedagogy?
- C. Have you heard of or have thoughts on the benefits (if any) of teaching semiotic theory/practices/resources to children?

##### Instruction:

- A. Describe to me what types of modes you use during your Language Arts, Mathematics and Social Studies lessons.
- B. Describe to me the steps that were taken to your lesson plan.
- C. Which subjects would you adopt multimodal pedagogy for?
- D. Do you talk with fellow colleagues about your assessment or instructional strategies you use? If so, describe.
- E. Describe to me what happens during a lesson. What sorts of expectations are there for students? What do you talk to them about?

##### Assessment:

- A. How do you determine which types of assessments you will use for each subject?
- B. How do students know what they need to do for the activity portion of the lesson?
- C. Describe how students are made aware of assessment expectations.



**Curriculum:**

- A. Do you think overall and specific objectives in the specific curriculum you use reflect a focus on semiotics or multimodal pedagogy? If yes, what subjects?
- B. What types of supports (if any) are in place to assist you with adopting this pedagogy that focuses on meaning making and multimodal pedagogy?

**CONCLUSION**

- A. Do you have any other questions or comments?

I appreciate the time you spent answering the questions thoughtfully for me interview. I look forward to observing your class/talking to you again over the next four months. Is there any other information you can think of right now that may be helpful to my study? Should you have any questions regarding the content of this interview or the study, please email me at [REDACTED]

Thank you once again. I truly appreciate your willingness to take part in the interview.

Modified data analysis table for instructional episodes between teacher and students, material removed for copyright. Please see citation of source of material below:

Flewitt, R.S., Hampel, R., Hauck, M., & Lancaster, L. (2009). What are multimodal data and transcription? In C. Jewitt (Ed.), *The Routledge handbook of multimodal analysis* (pp. 40-53). New York, NY; London, England: Routledge.

**Appendix I- Data Collection/Analysis- Informal Interviews**

Picture of student work	Transcription of student description of their work	Modes used

DEVELOPED BY: EMMA COOPER

**Appendix J- Data Collection- Modal Use Checklist**

DISCIPLINE \_\_\_\_\_  
 WHOLE CLASS SMALL GROUP ONE-ON-ONE (CIRCLE ONE)  
 ACTIVITY \_\_\_\_\_ BEGAN \_\_\_\_\_ ENDED \_\_\_\_\_  
 DATE \_\_\_\_\_  
 SITE \_\_\_\_\_  
 GRADE \_\_\_\_\_

Mode	Required	Student Construction	For Assessment	For Instruction	Explicit Support Provided	Explicit Support Not Provided
Text						
Stylized Text (e.g., italics, spacing)						
Music						
Gesture						
Image						
Dance						
Drawing						
Painting						
Graph						
Speech						
Other						

N.B. :

Created By: Emma Cooper

("Other" mode used will be detailed in NB section)

## Appendix J 1 Approval Notice for Site 2



**Western  
Research**

Western University Non-Medical Research Ethics Board  
**NMREB Annual Continuing Ethics Approval Notice**

Research Ethics

**Date:** July 29, 2016  
**Principal Investigator:** Dr. Kathryn Hibbert  
**Department & Institution:** Education\Faculty of Education, Western University

**NMREB File Number:** \_\_\_\_\_  
**Study Title:** Researching Multiliteracies Educational Assessments Through Digital Technologies

**NMREB Renewal Due Date & NMREB Expiry Date:**  
Renewal Due -2017/08/31  
Expiry Date -2017/09/26

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed the Continuing Ethics Review (CER) form and is re-issuing approval for the above noted study.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), Part 4 of the Natural Health Product Regulations, the Ontario Freedom of Information and Protection of Privacy Act (FIPPA, 1990), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Ethics Officer, on behalf of Dr. Riley Minson, NMREB Chair

Ethics Officer: Erika Basile \_\_\_ Katelyn Harris \_\_\_ Nicole Kaniki \_\_\_ Grace Kelly \_\_\_  Vikki Tran \_\_\_ Karen Gopaul \_\_\_

## Appendix K 1 Letter of Information and Consent for Educator Participant at Site 2



**Revised:** January 22, 2016

**Project Title:** Researching Multiliteracies Educational Assessments Through Digital Technologies

**Principal Investigator:** Kathryn Hibbert, PhD, Faculty of Education, Western University

### Letter of Information

#### 1. Invitation to Participate

You are being invited to participate in the research and development of a 'cloud curriculum' based on Lois Burdett's internationally acclaimed print series, *Shakespeare Can Be Fun*. This study is interested in learning from a range of stakeholders (students, parents, educators, and academics) how the affordances of digital technologies allow us to document and represent learning in ways that go beyond the limitations of traditional print-based assessment practices. You have been invited to participate because you fit one of the demographic areas we are interested in, have specific expertise in the area, or were suggested by another participant as someone who would be interested.

#### 2. Purpose of the Letter

The purpose of this letter is to provide you with the information required for you to make an informed decision regarding participation in this research.

#### 3. Purpose of this Study

The purpose of this project is to better understand the ways in which technology can help educators document and capture both the process and the products of learning in ways that will serve the needs and goals of a range of stakeholders that include students, parents, educators, administrators and governance bodies.

#### 4. Inclusion Criteria

Individuals who represent one (or more) of the targeted stakeholder groups (e.g., students, parents, educators, academics) and are interested in participating in the study are welcome.



**5. Exclusion Criteria**

Individuals who lack the most basic computer skills will be ineligible to participate in the study.

**6. Study Procedures**

If you agree to participate, you will be asked to complete a brief survey that asks for some demographic information and how you would like us to contact you. You may then be invited to interact with the digital materials either through a link that will be provided, or in person at an agreed upon location (such as the Faculty of Education, Western University). Your interaction will be tracked electronically (if you access the link) or it will be videotaped and/or audiotaped if you choose to participate in person. (You can participate without video/audio recording). It is anticipated that the entire task will take about an hour. Only one session is requested but you are welcome to attend additional sessions as your time and interest permit. We anticipate involving approximately 50 participants in total in this pilot study.

**7. Possible Risks and Harms**

There are no known or anticipated risks or discomforts associated with participating in this study.

**8. Possible Benefits**

Participants will be part of the design of a 'cloud curriculum' and will have an opportunity to show researchers and developers what they are able to do with learning materials, and how the interaction contributes to their learning. They will be active participants in knowledge generation rather than passive receivers of what someone else has deemed to be important to them. The expectation is that the design will reflect increased diversity in flexibility in terms of how we evaluate and assess learning. This will benefit those who are marginalized by current narrow, print-based assessment practices that do not account for the expanded communication practices we engage with today.

**9. Compensation**

There is no compensation for participation in this research.



#### 10. Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your future.

#### 11. Confidentiality

All data collected will remain confidential and accessible only to the investigators of this study. Data collected will be stored a secure university network behind institutional firewalls and password protected. In all subsequent publication and dissemination of results, a pseudonym will be used in place of your name to protect your identity. If you choose to withdraw from this study at any time, your data will be removed and destroyed from our database. While we will do our best to protect your information there is no guarantee that we will be able to do so. The inclusion of your initials and your date of birth may allow someone to link the data and identify you. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

#### 12. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact the Principle Investigator: Dr. Kathryn Hibbert, [REDACTED] or [REDACTED].

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics [REDACTED], email: [REDACTED].

#### 13. Publication

We expect to create a virtual forum within the sandbox area where participants can choose to engage in ongoing discussion or monitor the progress of the development. If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please contact Dr. Kathryn Hibbert at [REDACTED].

#### 14. Consent

Informed consent will be indicated by signing the consent form that accompanies this letter.

*This letter is yours to keep for future reference.*





**Consent Form**

**Project Title:** Researching Multiliteracies Educational Assessments Through Digital Technologies

**Study Investigator's Name:** Dr. Kathryn Hibbert

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

Participant's Name (please print): \_\_\_\_\_

Participant's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Person Obtaining Informed Consent (please print): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix L 1 Letter of Information and Consent for Child and Parent/Guardians at Site 2



**Revised:** January 22, 2016

**Project Title:** Researching Multiliteracies Educational Assessments Through Digital Technologies

**Principal Investigator:** Kathryn Hibbert, PhD, Faculty of Education, Western University

### Letter of Information

#### 1. Invitation to Participate

You are being invited to participate in the research and development of a 'cloud curriculum' based on Lois Burdett's internationally acclaimed print series, *Shakespeare Can Be Fun*. This study is interested in learning from a range of stakeholders (students, parents, educators, and academics) how the affordances of digital technologies allow us to document and represent learning in ways that go beyond the limitations of traditional print-based assessment practices. You have been invited to participate because you fit one of the demographic areas we are interested in, have specific expertise in the area, or were suggested by another participant as someone who would be interested.

#### 2. Purpose of the Letter

The purpose of this letter is to provide you with the information required for you to make an informed decision regarding participation in this research.

#### 3. Purpose of this Study

The purpose of this project is to better understand the ways in which technology can help educators document and capture both the process and the products of learning in ways that will serve the needs and goals of a range of stakeholders that include students, parents, educators, administrators and governance bodies.

#### 4. Inclusion Criteria

Individuals who represent one (or more) of the targeted stakeholder groups (e.g., students, parents, educators, academics) and are interested in participating in the study are welcome.

**5. Exclusion Criteria**

Individuals who lack the most basic computer skills will be ineligible to participate in the study.

**6. Study Procedures**

If you agree to participate, you will be asked to complete a brief survey that asks for some demographic information and how you would like us to contact you. You may then be invited to interact with the digital materials either through a link that will be provided, or in person at an agreed upon location (such as the Faculty of Education, Western University). Your interaction will be tracked electronically (if you access the link) or it will be videotaped and/or audiotaped if you choose to participate in person. (You can participate without video/audio recording). It is anticipated that the entire task will take about an hour. Only one session is requested but you are welcome to attend additional sessions as your time and interest permit. We anticipate involving approximately 50 participants in total in this pilot study.

**7. Possible Risks and Harms**

There are no known or anticipated risks or discomforts associated with participating in this study.

**8. Possible Benefits**

Participants will be part of the design of a 'cloud curriculum' and will have an opportunity to show researchers and developers what they are able to do with learning materials, and how the interaction contributes to their learning. They will be active participants in knowledge generation rather than passive receivers of what someone else has deemed to be important to them. The expectation is that the design will reflect increased diversity in flexibility in terms of how we evaluate and assess learning. This will benefit those who are marginalized by current narrow, print-based assessment practices that do not account for the expanded communication practices we engage with today.

**9. Compensation**

There is no compensation for participation in this research.



#### 10. Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your future.

#### 11. Confidentiality

All data collected will remain confidential and accessible only to the investigators of this study. Data collected will be stored a secure university network behind institutional firewalls and password protected. In all subsequent publication and dissemination of results, a pseudonym will be used in place of your name to protect your identity. If you choose to withdraw from this study at any time, your data will be removed and destroyed from our database. While we will do our best to protect your information there is no guarantee that we will be able to do so. The inclusion of your initials and your date of birth may allow someone to link the data and identify you. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

#### 12. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact the Principle Investigator: Dr. Kathryn Hibbert, [REDACTED] or [REDACTED].

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics [REDACTED], email: [REDACTED]

#### 13. Publication

We expect to create a virtual forum within the sandbox area where participants can choose to engage in ongoing discussion or monitor the progress of the development. If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please contact Dr. Kathryn Hibbert at [REDACTED].

#### 14. Consent

Informed consent will be indicated by signing the consent form that accompanies this letter.

*This letter is yours to keep for future reference.*



**Consent Form**

**Project Title:** Researching Multiliteracies Educational Assessments Through Digital Technologies

**Study Investigator's Name:** Dr. Kathryn Hibbert

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

Child's Name: (if applicable): \_\_\_\_\_

Participant's Name (please print): \_\_\_\_\_

Participant's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Parent/Legal Guardian/Legally Authorized Representative (if applicable) Print: \_\_\_\_\_

Parent/Legal Guardian/Legally Authorized Representative (if applicable) Sign: \_\_\_\_\_

Parent/Legal Guardian/Legally Authorized Representative (if applicable) Date: \_\_\_\_\_

Person Obtaining Informed Consent (please print): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix M 1 Recruitment Letter

Dear (Potential Participant)

My name is Kathy Hibbert, and I am a researcher at Western University in the Faculty of Education. I am currently conducting research into the development of a digital platform for a literacy curriculum based on Lois Burdett's award winning series "Shakespeare Can Be Fun". Investigating the ways the materials may support teaching and assessment in a digital format will allow us to better understand the capacities of digital technologies to document 21<sup>st</sup> Century learning.

I am writing to you because you are a (community organization, principal, educator - as appropriate) and I am hoping that you will distribute the attached "Letter of Information" and "Consent Forms" to the leaders, parents, and students involved in your program. As you will see in the attached letter, we have received ethical approval at Western to conduct this research, and those who wish to become involved, can contact me directly at [REDACTED]. I would appreciate your support in circulating this information to your community. If you have any questions about the study, please do not hesitate to ask me.

Sincerely,

*Kathy Hibbert, PhD.*

[REDACTED]  
[REDACTED]  
[REDACTED]

t: [REDACTED]  
e: [REDACTED]

07/05/2017

## Curriculum Vitae

**Name:** **Emma Cooper**

**Post-secondary Education and Degrees:** University of Toronto  
Toronto, Ontario, Canada  
2007-2011 h.B.A. Semiotic and Linguistic Anthropology,  
Semiotics and Communication Theory

University of Toronto, Ontario Institute for Studies in Education  
Toronto, Ontario, Canada  
2011-2013 M.T. Primary-Junior Qualifications

University of Toronto  
Toronto, Ontario, Canada  
2013-2014 Information Studies (graduate coursework)

Western University  
London, Ontario, Canada  
2014-2019 Ph.D. Educational Studies

**Honours and Awards:** Western University  
Art Geddis “Learning About Teaching” Memorial Award  
2017

**Related Work Experience** Elementary Occasional Teacher  
Toronto District School Board  
2019 – present

Lecturer, Graduate Education  
Western University  
2018

Instructor, Preservice Teacher Education  
Western University  
2016-2017; 2017-2018

Research Assistant  
Western University  
2014-2018

Teaching Assistant  
University of Toronto  
2012-2014

Emergency Supply Teacher  
Toronto District School Board  
2010-2015

**Publications:**

**Cooper, E.,** & Heydon, R. (In press). Inclusion and marginalization of youth. In R. Heydon (Regional Ed.), K. Tilleczeck (Ed.-in-Chief). Set: Youth, (Volume: Canada). *Bloomsbury education and childhood studies*. London, England: Bloomsbury.

**Cooper, E.** (2016). Designing an interview protocol focusing on teachers' experiences using semiotic theory in the elementary classroom: An instrumental case study. In M. Danesi & S. Greco (Eds.), *Case studies in discourse analysis* (pp. 103- 121). Munich, Germany: Lincom Europa.

Ghannoum, H., & **Cooper, E.** (accepted). Book review: Multimodal perspectives of language, literacy, and learning in early childhood. *Journal of Early Childhood Literacy*.

Heydon, R., **Cooper, E.**, & Tran, A. (2016). Literacy lessons: Core concepts from multiliteracies for language teachers in contemporary times. *Contact: TESL Ontario*, 42(4), 52-54. Retrieved from <http://contact.teslontario.org/wp-content/uploads/2016/11/ContactFall2016.pdf>

Khattar, R., Callaghan, K., & **Cooper, E.** (In press). Initial teacher education. In R. Heydon (Ed.). Set: Early Childhood Education, (Volume: Canada). *Bloomsbury education and childhood studies*. London, England: Bloomsbury.

Khattar, R., Heydon, R., **Cooper, E.**, & Callaghan, K. (In press). Embedding families and communities: Policy intersecting with pedagogy. In L. Gibbs and M. Gasper (Eds.), *Thinking about pedagogy in early education: Policy intersecting pedagogy*. New York, NY: Routledge.