

Discord and Dissonance: Living through and Learning from a Teacher Educator's Memories

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Abstract

This thesis presents the memories of my experiences as a teacher educator in a variety of teacher education programs. In the context of a “kaleidoscope of notions” informing practices in teacher education, several issues persist: conflicting aims between programs and practicums, a lack of culturally responsive pedagogy and weak epistemological or content literacy. In response, teacher educators are called to research their own practices as sites for developing conceptual clarity about teaching and learning. Thus, this study aims to examine my experiences as a teacher educator in order to develop knowledge about practice and reveal insights into the complex nature of teaching prospective teachers. Using self-study research as the primary approach, theoretical inquiry (to frame my questions) and singular case study (to define each experience as particular and unique), I examine a collection of memories, written as *memory reflections*, of my life as a teacher educator. In selecting these memories, I attend to discordance and dissonance in my learning as a teacher educator and include experiences of teaching that are at times jarring, unsettling, yet provocative and informative. The *memory reflections* are a composite of narrative, reflective and authentic accounts of my practices with student teachers and colleagues. Drawing from authority of experience and critical reflection, I analyse the memories of discordant experiences and develop: a) understandings about the nature of self-study research; b) knowledge about teacher education practices; and c) assertions regarding learning from experience. The outcomes of this study include the articulation of my practice as an array of *pedagogical orientations* and the conceptualization of a recurring *cycle of discordance* as a heuristic for learning from experience.

Keywords: teacher education; self-study research; discordance; pedagogy; learning from experience; teacher practice

Dedication

This work is dedicated to:

Perveen – the talented, warrior-princess child,

Simrin – the sweet and sassy middle child,

Sajaan – the soft-hearted, soul child

and

Jeet – the generous father and husband.

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Table of Contents

Approval	ii
Abstract	iii
Dedication	iv
Acknowledgements	v
Table of Contents	vi
List of Acronyms	ix
Preface	x
Chapter 1. Experience as a Starting Point	1
1.1. Learning from Experience	1
1.2. Why Study Experiences?	2
1.3. Experiences as Sacred Memories	4
1.4. Lines of Thinking	5
1.4.1. Critically reflective lenses	5
1.4.2. Currere	6
1.4.3. Dissonance	7
1.5. Methodological Frameworks	8
1.5.1. Self-study in teacher education	8
1.5.2. Curriculum and theoretical inquiry	10
1.5.3. Singular case study	11
1.6. The Structure of the Thesis	12
1.7. Transitions	14
Chapter 2. Cultivating a Passion for Discordance	15
2.1. Situating My 'Self' in the Work	15
2.2. Early Memory Reflections	16
2.2.1. Becoming Canadian	16
2.2.2. Rethinking schools	17
2.2.3. From teacher to teacher educator: Setting the stage for memory work	19
2.2.4. Challenge and resilience	21
2.3. Moving Forward	23
2.4. Literature Review	23
2.5. Part 1: Discordance in the Field of Teacher Education	24
2.5.1. Preface: The aims of teacher education programs	25
2.5.2. The program and practicum	27
2.5.2.1. Difference in cultures	28
2.5.2.2. Counter expectations	29
2.5.2.3. Theory/practice chasm	30
2.5.3. Epistemological literacy	33
2.5.3.1. Nature of science	34
2.5.3.2. Teachers' images of science	35
2.5.3.3. A philosophically valid curriculum	37

2.5.3.4.	Teachers' epistemology and beliefs about science	37
2.5.3.5.	Epistemologically literate teachers.....	38
2.5.4.	Culturally responsive pedagogy	39
2.5.4.1.	Cultural responsiveness.....	39
2.5.4.2.	Curricular designs	42
2.5.5.	Connecting concerns in teacher education with studying experiences.....	43
2.6.	Part 2: Literature Informing the Study of My Experiences.....	44
2.6.1.	Self-study in teacher education.....	44
2.6.1.1.	Emergence of self-study	44
2.6.1.2.	The spaces of self-study	45
2.6.2.	Critically reflective teachers	47
2.6.2.1.	Lenses of knowing	48
2.6.3.	Learning from experience—The “authority of experience”	50
2.7.	Transitions.....	52
Chapter 3. Methods and Approaches.....		53
3.1.	Foundations for Inquiry	53
3.2.	Singular Case Study	60
3.3.	Theoretical Inquiry.....	61
3.4.	Self-study	63
3.5.	Conducting the Inquiry	67
3.5.1.	Selecting memories.....	68
3.5.2.	Writing memory reflections.....	71
3.5.3.	Generating a conceptual scheme	71
3.5.4.	A point about rigor and trustworthiness.....	72
3.6.	Transitions.....	73
Chapter 4. Discordant Experiences in a Teacher Educator's Journey		75
4.1.	Key Turning Points.....	75
4.2.	Memory Reflection: Metaphors and Missteps— Transforming Teacher Identity... 76	
4.2.1.	<i>Currere</i> and autobiographical curriculum	80
4.2.2.	Cultural change	81
4.3.	Memory Reflection: Place-based Pedagogy, Placements, Place-meanings.....	85
4.3.1.	Recognizing the land/The land recognizing me	85
4.3.2.	Finding the familiar in the unfamiliar	86
4.3.3.	Place as my teacher.....	87
4.3.4.	Learning places.....	88
4.3.5.	Community ethnographies	91
4.3.6.	Schooling the world—A generic education for nowhere	92
4.3.6.1.	Tunnel vision.....	94
4.3.6.2.	Help.....	94
4.3.6.3.	Generic education.....	95
4.4.	Memory Reflection: Circle and Circular Pedagogy.....	97
4.5.	Memory Reflection: From Science Student to Science Teacher to Science Teacher Educator.....	101

4.5.1.	Discrepant events	101
4.5.2.	Angular engagement.....	103
4.5.3.	Making the invisible visible: Conceptual change.....	105
4.5.4.	Mind Walk: Politics, poetry and science.....	105
4.5.4.1.	The shadow side of science.....	105
4.5.4.2.	A crisis of perception.....	106
4.5.5.	Navigating practicum.....	108
4.6.	Transitions.....	111
Chapter 5. Understanding my Journey as a Teacher Educator.....		113
5.1.	Learning from Self-study Research.....	113
5.2.	Part A) Self-study as a Process and a Practice	115
5.2.1.	Reflecting on learning from experience.....	115
5.2.1.1.	Living through experience.....	115
5.2.1.2.	Discordance as a recurring cycle of reflective dissonance	116
5.2.2.	The nature of self-study	117
5.2.2.1.	Reflexive	117
5.2.2.2.	Transformative	117
5.2.2.3.	Messy, slow, layered.....	118
5.2.3.	Knowledge of practice from self-study: Pedagogical orientations.....	119
5.2.3.1.	Place-meaning and place-conscious pedagogies.....	119
5.2.3.2.	Circular pedagogies and interconnected learning.....	120
5.2.3.3.	Metaphoric pedagogies.....	121
5.2.3.4.	Epistemic pedagogies.....	121
5.2.3.5.	Practice as pathways to self-understanding	122
5.2.4.	Cycles of discordance as a conceptual framework	123
5.3.	Part B) Implications for Teacher Educators	124
5.3.1.	Trusting discordance to facilitate learning.....	124
5.3.2.	Defying patterns.....	125
5.3.3.	Responding to concerns in teacher education	126
5.3.4.	Questions for further study.....	127
5.4.	Transitions.....	128
References.....		129

List of Acronyms

PQP	Professional Qualification Program
FTT(s)	Foreign Trained Teacher(s)
NoS	Nature of Science
BC	British Columbia
S-STTEP	Self-study of Teaching and Teacher Education Practices

Preface

In the time leading up to writing this thesis, after dealing with several family health issues, I realized the power of my professional experiences in supporting me to overcome challenges. I found my resilience in the slow spaces of reflecting and contemplating, while noticing and being drawn to discordance both in my work and personal life. I longed to reconnect with my ‘teacher heart’ again, which had been buried under the weight of the challenges I was experiencing at the time. The discordance in my personal life—having to rationalize the pain and sorrow—also distanced me from visceral and emotional engagement in my professional work as teacher educator. In times of losing heart, I turned to experiences that allowed me to find my way back to who I was as an individual and to find my heart again as a teacher educator. Through personal reflection, my strengths came from a number of places, but importantly for this work, from delving into my memories. I spent time thinking of better days and beautiful moments from my childhood. I travelled in my mind to places and events when I turned to my heart as a teacher to find my way through. I remembered people who I met along my journey and what I learned from them. These memories were often the only reasons I made it through those days. Yet, I never thought of them as deeply and with as much wonder as I did during this challenging time in my life. They were my anchors, buoys, and touchstones of who I was and what I valued. They kept me grounded yet engaged me in reflective conversations with my own thoughts and with people who walked beside me in this journey of remembering. I believed in these memories because they allowed me to flourish, laugh, reminisce, feel, and be moved to understand myself in ways I had not before. As an educator, I began to appreciate that I remembered experiences that, at times, completely disrupted my thinking or were so discordant that I felt my teacher heart sink and my frustration swell. However, importantly, from the moments of wondering about possibilities, wandering through time, and reminiscing on the events of my life, I *learned*. I realized that I took away much more from each experience than I ever knew at the time and I learned more as I remembered them. This was instrumental in shaping the study and I realized the potential of memory work to surface experiences that were provocative, insightful and deeply transformative. To my reader, this thesis is a collection of experiences as a teacher educator that speaks to remembering and *living through* experiences that continue to inform my work, vision and identity to this day. It is well understood that many find resilience in times of difficulty—the human spirit is called upon

to do just that. My resilience was found in memories, of which a select number are presented for your reading in this thesis.

Chapter 1.

Experience as a Starting Point

1.1. Learning from Experience

The value of experience in learning has long been deliberated in education. From the time of “experiential education” (Dewey, 1938) to “authority of experience” (Munby & Russell, 1994) to more recent attention to the dimensions of place-conscious education (Smith, 2002; Gruenewald, 2003) and “maker pedagogy” (Bullock & Sator, 2015), the role of experience in both teaching and learning has proven significant. Whether it is experience one brings to a situation, experience as a history of events in one’s life, or the act of experiencing, the potential exists for learning from all the ways in which we understand experience. Thus, it is possible to conceive that *learning from experience* reveals hidden and sub-structural dimensions of an activity, a process, concept, or place, and that experience is regarded as inherently theory-laden, bearing the potential for meaning-making and concept building. We can start to imagine that experience can sometimes give rise to theoretical knowledge, not as a result of concepts waiting to be discovered as *a priori*, but by attending to the ways in which an experience shapes us, speaks to us, resonates within us, and is altered by us. Rather than a sole focus on discovering the hidden meanings from an experience, we *construct meanings* through the ways in which we interact both within and with our experiences. While we have seen decades of ‘learning by doing’ instructional models, this kind of learning from (and through) experience is considerably more nuanced as it moves us from the literal and concrete world of appearances and events to the conceptual and virtual worlds of reflection and imagination. Further, *learning from experience* requires a deep and sustained reflection on, and attention to, *living through* experience. The double meaning of the phrase is intentional: we live through an experience with the assumption that we will leave an experience knowing something more about ourselves and the content embedded within the experience in a kind of chronological progression. For example, we live through the experience of conducting a scientific experiment and come away knowing more about the science and about our actions in such contexts. Living through experience may also mean that the fullness of our lives is defined through experience—*living through* experience

suggests that we become *fully alive* in our experiences and only experience can bring to life who we are and what we know. These dual perspectives on experience are informative to the ways in which experiences and memories as a teacher educator are portrayed in this thesis—I lived through my memories as a teacher educator, learning about my practices, transforming my identity and becoming more fully ‘who I am’ as an educator as a result of them.

The notion that we *live through* experience in these ways is relevant to the memories I selected—ones that allowed me to learn and grow in ways that were previously or seemingly untapped. I came to understand my experiences qualitatively differently by remembering them than I did by engaging in them at the time. In the midst of living through experiences, I encountered discordance—a sense of being apart (dis) from the heart (cordis)—that hindered me from becoming fully alive in the moments of the experience. I struggled to find harmony between actions and beliefs, instead remaining chained to the discordance that was both cognitive and visceral. While working with student teachers and colleagues, these experiences shook me and disrupted my thinking about teaching and learning, about my role as a teacher educator and about the practices my student teachers and I were engaged in at the time in teacher education programs. Living through experience was essentially living in the shadow of discordance, figuratively trapped in a state of dis/cordis (apart from the heart), and attempting to understand, in context, how I could find the seemingly elusive harmony I sought in my practice. The experiences tested my beliefs and put into question practices I had been engaged in as a teacher educator through the dissonance often associated with “tensions of teaching about teaching” (Berry, 2007). These experiences of disharmony between my inner voice and the visceral, literal and pragmatic aspects of the context created an ebb and flow in making sense of my practices as teacher educator. Consequently, *living through* experience revealed the discordance in ways that illuminated my understanding of memories. I became *fully alive* by embracing dissonance and discordance as turning points in my development as a teacher educator.

1.2. Why Study Experiences?

I was aware of the myriad concerns facing teacher education as I selected and wrote of my experiences. What could be learned from this study about issues facing teacher education? How could my memories be informative to the broader discourses of

curriculum and instruction in the field of teacher education? What have I learned from these experiences as a teacher educator that may be useful to other teacher educators? As I considered these questions, I drew on two distinct but related bodies of work: the areas of self-study research and the research on teacher education curriculum and programming. Self-study scholars such as Loughran and Russell (1997), Berry (2007), Kitchen (2006), Pinnegar and Hamilton (2009) and Bullock (2009) provided theoretical and methodological foundations to posit my experiences as informative. The research on teacher education surfaced the need for conceptual clarity in designing programs for prospective teachers (Zeichner & Cochrane-Smith, 2005). Thus, the problem of the thesis became situated in the nexus of these two areas of research in relation to the “kaleidoscope of notions” (Wang, Lin, Spalding, Klecka, & Odell, 2011) informing program designs and curriculum in teacher education. As the authors state:

Even while scholars, teacher educators, and policy makers are calling for the identification of a single, effective pattern for producing quality teachers, the variety of contexts, ideologies, and other factors continue to disrupt the otherwise stable images of quality teaching being proposed in the literature. (Wang et al., 2011, p. 332).

The result is a constant ‘tweaking’ of program structures such as adding more practicums, creating strong mentorship training, and enhancing method course instruction (Darling-Hammond, 2000; 2006; Abd-El-Khalick & Lederman, 2000). Yet, little is understood about the experiences in teacher education that undergird these programmatic ‘tweakings’—what pedagogical orientations are at play? What can be understood of the visceral and conceptual dimensions of teaching and learning? What creates dissonance and harmony and what value do these have in teacher development? What can be learned from studying the experiences of a teacher educator? What impact might this learning have on the problem of conceptual disarray in the field of teacher education? How do *living through* and *learning from* experience inform the practices of teacher education in a way that contributes understanding to the “kaleidoscope of notions”? In the quest to determine structural components and define a set of common, effective practices for producing quality teachers, we fail to ‘slow our gaze’ and take notice of those disruptive contexts, ideologies and other factors that are part of the daily lives and experiences of teacher educators—the doing, being, thinking, and reflecting that constitutes *living through* and becoming fully alive in the practices of teacher education. These experiences can sometimes carry risks, create unease, and even involve trauma and are therefore qualitatively distinguishable from the relatively mundane practices of structuring programs

or increasing the length of practicums. I suggest that the kind of engagement presented in this thesis be viewed as a challenge to, and critique of, the flattening of such an experiential dimension in the pursuit to create perfect patterns in teacher education. Thus, in the midst of attempting to stabilize the kaleidoscope, I present the study of my experiences as an alternative to comparing practicum activities or suggesting courses—to understand with greater clarity the very processes that set the patterns in motion.

1.3. Experiences as Sacred Memories

Over the span of 14 years as a teacher educator, I had the opportunity to work in a number of teacher education programs in varied roles as an instructor, coordinator, faculty associate, mentor, and tenured faculty member. These roles and diverse contexts shaped my practices as a teacher educator in interesting ways leading me to consider my experiences as worthy of formal study. This work represents my experiences as a teacher education in the form of memories, including personal and professional stories of my practices of “teaching about teaching” (Berry, 2007). I analyse and interpret these memories in terms of the discordance that sometimes occurs in professional practice—moments of irony and inconsistency, pain and suffering, dissonance and contradiction that permeate our lives as teachers and teacher educators. In analysing my experiences as a teacher educator, I offer the reader insights into teaching, learning and transforming as a teacher educator, and in turn, suggest pedagogical orientations that are framed by a recurring “cycle of discordance”, a heuristic that can be seen to trigger transformative growth.

In the spirit of Brookfield’s (1995) critically reflective lenses, discussed in more detail in subsequent sections, I selected memories based on my interactions with students and colleagues that were documented in personal journals and papers. The memories of particular events in my life as a teacher educator were ones that created dissonance and discordance for me—felt viscerally at times—yet they held valuable meanings in terms of my understandings of teaching about teaching. I also spent significant time in contemplation, steeped in the inner world of the “private intellectual” (Pinar, 2004) wondering about possibilities and generating ideas about my practices as a teacher educator. Through critical reflection, the possibilities and ideas transformed into the sacred memories of *living through* and *learning from* experience as I navigated the larger

field of teacher education and the very personal world of my own transformations as a teacher educator.

Written in the form of *memory reflections*, I present experiences as memories that shaped my identity, practices and vision as a teacher educator. As the evidence in this study, I draw inspiration from Mitchell and Weber (1999) who suggest that “memory work” is productive and proceeds to inform one’s identity and reveal knowledge embedded in practice that constitutes the experiences of teacher educators. By writing memory reflections, and focusing on key turning points (Bullock, 2014), a space of self-understanding and theorizing opens up in the thesis. More than recalling events, the memory reflections serve to bring the conceptual elements of practices and experiences together with the visceral—I begin to *re-live* the memories by engaging in the “memory work” of writing from multiple lenses, methods and lines of thinking.

1.4. Lines of Thinking

1.4.1. Critically reflective lenses

Learning from my experiences as a teacher educator is situated within and supported by several lines of thinking to reveal to the reader perspectives and epistemological underpinnings that drive discussions in subsequent chapters. Brookfield’s (1995) critically reflective lenses, a framework for learning through various relationships evident throughout the memory reflections, suggest we learn from multiple lenses: our autobiographies as students and teachers to allow us to “engage in personal self-reflection [to] become aware of the paradigmatic assumptions and instinctive reasonings that frame how we work” (Brookfield, 1995, p. 30); “our students’ eyes” by being attentive to how they engage in learning; our colleagues’ experiences through critical conversations and; literature to add dimension and sophistication to our ideas and to understand experiences by “naming them in different ways and by illuminating generic aspects of what we thought were idiosyncratic experiences and processes” (Brookfield, 1995, p. 30). These critically reflective lenses are presented as *lenses of knowing* that influence how memories are selected and methodological approaches are applied, grounding the study of memories in self-reflection, in relationships with colleagues and students and in reference to literature in the field of teacher education. As the study evolves, the lenses of knowing are ‘ways into’ my memories and are integral to examining

experiences and developing more sophisticated knowledge of teaching and learning with students and colleagues. In doing so, the lenses of knowing facilitate coming to terms with pedagogical orientations that drive my practices of teaching about teaching.

1.4.2. Currere

The second line of thinking informing the thesis is Pinar's notion of curriculum as *currere*. He states that *currere* is the "systematic study of self-reflexivity within the process of education [and] provides a strategy for students of curriculum to study the relations between academic knowledge and life history in the interest of self-understanding and social reconstruction" (Pinar, 2004, p. 35). The memory reflections represent self-reflexivity—a *curriculum of becoming* as a continual merging and overlapping of the academic knowledge I hold about teacher education and my personal history and life experiences as a teacher educator. Pinar states, "the point of *currere* is an intensified engagement with daily life, not an ironic detachment from it" (Pinar, 2004, p. 37) signifying the importance of retrospection into my life experiences as a teacher educator and sustained engagement with daily teaching, researching and writing.

Currere reconceptualises curriculum from the conventional notion of course subjects to curriculum as a "complicated conversation" (Pinar, 2004, p. 185) between one's inner intellect and the public spheres of knowledge. At one level, this concept defines my experiences as ongoing conversations between my own reflections and insights and the broader fields of public discourse on teacher education, across the literature and with colleagues and student teachers at the time of the events. The interplay between the private and public discourses, illustrated in each of the memory reflections, gives rise to the space for self-study—between the researcher and the researched (Hamilton & Pinnegar, 1998; Pinnegar & Hamilton, 2009), a point elaborated in later sections. At another level, the concept of a complicated conversation allows me to engage in a kind of conversation with my memories as I write about them—another layer of the private and public discourse. In doing so, the memories are changed from events that are conceivably 'frozen in time' to lived experiences (Aoki, 1993) in the moments of writing reflectively about them. By acting on the memories through the writing of the memory reflections, I offer the reader a sense of the inherent worth of my memories and the potential learning that can come from living through and examining experiences. Further, within the framework of *currere* as a complicated conversation, Pinar (2004) poses the

question: “What would the curriculum look like if we centered the school subjects in the autobiographical histories and reflections of those who undergo them?” (p. 38). In considering this question, I present this work as a study of my *curriculum of becoming* as a teacher educator and, therefore, center the subject as me—a composite of my reflections, stories, practices, experiences and memories that ultimately give rise to knowledge of practice in the form of pedagogical orientations. The question also presumes the contents of my life experiences are instructive and hold potential to lead to valuable learning about growing and transforming as a teacher educator. Clandinin and Connelly (1995) refer to the study of teachers’ experiences—personal, formal, and educational—as studying the “curriculum of lives” (p. 22), setting the stage for the methodological avenues taken in this work. Thus, *currere* establishes my life experiences as a teacher educator as meaningful curriculum that can potentially engage the reader in a complicated conversation with the range of memories, events, and discordances that permeated my practices as a teacher educator.

1.4.3. Dissonance

The affinity for dissonance in relation to my practices emerges as a third line of thinking to understand my experiences. Dissonance in my life experiences as a teacher educator draws me to focus on key memories—ones that are captivating and inherently disruptive to my thinking even in the process of writing the memory. While dissonance, synonymous with terms such as controversy, difference, discordance, and disruption, emerges from two separate but arguably related fields—learning theory in the realm of psychology and discrepant experiences in science education—it serves as a unifying concept in this thesis. I undertook the study largely due to the prevalence of dissonance in my life as a teacher educator. In narrowing the focus on particular experiences and writing the memory reflections in this manner—as a collection of epiphanies, insights, ironies, and tragedies—dissonance became the ‘seeds of my thoughts’ and created yet another way into *learning from* experience in my practices as a teacher educator.

The concept of dissonance, with respect to the memories and outcomes of this study, is understood in particular ways. Cognitive dissonance is the disharmony or disagreement between beliefs and actions—discomfort is experienced by an individual who holds two or more contradictory beliefs, ideas or values at the same time, performs an action that is contradictory to one or more beliefs, ideas, or values, or is confronted by

new information that conflicts with existing beliefs, ideas, or values (Festinger, 1957). This theory addresses three states or relationships between the cognitive realms of beliefs, ideas, and values: a) a consonant relationship where what one thinks is consistent with the actions in which they observe or participate, b) irrelevant relationship where two actions/cognitions are unrelated to one another and therefore not implicated in any way, and c) dissonant relationship where two actions/cognitions are inconsistent with one another (Festinger, 1957). While the memories shared include, to a degree, aspects of these three relationships, the relationships themselves are not the focus of the analyses. Rather, they serve to accentuate particular nuances of the memories and reveal the dissonance I experienced at the time.

In terms of science education, dissonance and discrepancy play a key role in conceptual change models (Posner, Strike, Hewson, & Gertzog, 1982). Conceptual change theory involves disrupting or challenging prior conceptions by observing and interacting with scientific phenomena in order to revise or develop new knowledge—points salient to this study. While my memories involve dissonant experiences, by reflecting on them, knowledge of practice is constructed and revised. Rather than replacing conceptual understanding by reflecting on experiences, my conceptions evolve progressively into more sophisticated and complex understandings about my practices and transformations as a teacher educator. Thus, engaging in the study of personal and professional memories includes elements of both cognitive dissonance and conceptual change as mechanisms for learning from experience and generating knowledge about practice.

1.5. Methodological Frameworks

1.5.1. Self-study in teacher education

Self-study as a methodology continues to gain ground in the field of educational research as a rigorous means of interrogating the *space* between the researcher and the phenomena being researched (Hamilton & Pinnegar, 1998). In terms of this thesis, I suggest that the space emerges through the writing of memory reflections. By describing experiences in which I was directly involved as a teacher educator and subsequently reflecting on those experiences through the writing process, I step ‘outside the experiences’ and purposefully situate myself in a critical, reflective stance from which to view my memories. The writing approach is not distanced. Instead, such a stance

suggests that I view experiences from multiple perspectives, narrow my focus, and understand them in a manner that is difficult from inside the experience. As Loughran and Northfield (1998) remind us, self-study is distinct from reflective practice in that reflections are a “personal process of thinking, refining, reframing, and developing actions. Self-study takes these processes and makes them public, leading to another set of processes that reside outside the individual” (Loughran & Northfield, 1998, p. 15). While the memories might appear encased—locked into a time and context of the past—through reflection and stepping outside the experience, they are extended, re-experienced and re-lived into a tangible and visceral present.

Loughran (2007) further suggests that, “a central purpose in self-study is uncovering deeper understandings of the relationships between teaching about teaching and learning about teaching” (p. 12). Through this study, I intended to move beyond surface level thinking to “seriously differentiate between the doing of teaching and the knowledge of practice underpinning that teaching” (Loughran, 2007, p. 224). I aimed to find ‘ways into’ re-visioning myself as a teacher educator by identifying and exploring practices that (now) reside outside of myself as represented in both documented thoughts (personal) and actions (public). My decision to frame this exploration as a self-study was based on the assertion that inquiries beginning with the ‘self’ give richer insights into the practices of teaching and learning—the self is both implicated and complicit in examining practice (Hamilton & Pinnegar, 1998).

As following sections reveal, a persistent interplay between the personal and professional memories unfolds through the memory reflections where I examine self, actions and ideas, and the “thoughtful look at texts, experiences had, people known and ideas considered” (Hamilton & Pinnegar, 1998, p. 236) within the context of my journey as a teacher educator. Furthermore, as Beck, Freese, and Kosnik (2004) remind us, self-study is “a personal-constructivist-collaborative approach” (p. 1256) because it includes elements of ongoing inquiry, respects personal experience, and emphasizes the role of knowledge construction. This definition suggests that my inquiries are shaped by and constructed within the relationships between self, others and the experiences under study; by design, this connects with Brookfield’s (1995) *lenses of knowing* introduced earlier. As Clarke and Erickson (2004) claim, “for teaching to occur, there must be a *somehow* (italics in original), a way for an educator to know, recognize, explore, and act upon his or her practice” (p. 59). Similarly, Samaras (2002) interprets self-study to mean a “critical

examination of one's actions and the context of those actions in order to achieve a more conscious mode of professional activity, in contrast to action based on habit, tradition, or impulse" (p. xiii).

Frambaugh-Kritzer (2012) presents self-study as a retrospective process whereby specific vignettes reveal how her practices change in relation to technology integration in her classroom. A retrospective self-study fits with the approach I took as I recall and analyse specific experiences in my practices as a teacher educator to lay the groundwork for the possibilities offered in final chapters. As the following sections and chapters reveal, the self-study is therefore the "somehow" of coming to terms with my experiences.

1.5.2. Curriculum and theoretical inquiry

To complement the methods of self-study, I turned to theoretical inquiry, one of several forms of curriculum inquiry. Short (1991) generally defines curriculum inquiry as a collection of methods associated with "identifying those curriculum questions that are amenable to inquiry, knowing what form of inquiry to use in attempting to answer those particular questions, and carrying out the appropriate process of inquiry in order to obtain those answers" (p. 2). I developed questions to explore my experiences and, using theoretical inquiry, generated assertions and conceptualizations as outcomes of the study. The guidelines for theoretical inquiry include limiting the scope of the curriculum under inquiry, discerning key concepts that emerge from the relationships found within the curriculum being studied, generating a conceptual scheme, and applying that scheme to inform further study (Short, 1991). Given these guidelines, theoretical inquiry seems an appropriate complement to the method of self-study as it provides a suitable structure to study memories and generate conceptual schemes in the form of pedagogical orientations. Several questions guide the theoretical inquiry in this study: What memories stayed alive in my work? What happened in the memories that resonated at a deep level for me? How can I describe the discordance associated with the memory? What valuable learning can be generated from these memory reflections? These questions not only inform the process of selecting and analyzing memories, they facilitate the development of language to identify pedagogical orientations associated with the recurring cycle of discordance—a heuristic proposed in the final chapter to describe learning from experience. I suggest that theoretical inquiry gives structure to the space of self-study

(between researcher and researched) by suggesting a methodological pathway for the 'somehow' in learning the 'so what' of the thesis.

1.5.3. Singular case study

A third methodological approach is that of singular case study (Stake, 2005). While I acknowledge that the experiences shared as memories in this study do not necessarily fit with the methods of case study as a research genre, the features of singular case study are suggested as pertinent to analyzing the memories. As case study concerns itself with developing hypotheses and generalizable knowledge from the examination of cases (Guba & Lincoln, 1994), a tenet that counters the ontology of self-study research as both a practice and a method of developing assertions, I acknowledge the limited application of case study as a methodology. However, the features of singular case study are useful in defining the manner in which each memory of my experiences of teaching about teaching has been viewed: as particular and experiential.

Each memory is interrogated as an epistemologically unique case: each grows out of a particular and distinct set of circumstances; the memories are context specific; and, the writing is intimately connected to the nature of the memory itself. As singular case study suggests, while experiences are bound, the possibilities for analyzing the case beyond its scope are unlimited, indeed desirable (Denzin & Lincoln, 2000) thus intimating the wider impact and usefulness of the learning that comes from exploring my memories. Within the singular case method, Stake's stance of *particularity* allows me to view the mosaic of my memories as disparate, yet related with each one surfacing unique insights through the writing of memory reflections. This stance rests on two assumptions: experiential knowledge is embedded within a case; and, examining a singular case occurs in the absence of comparison to other cases. As my practices as a teacher educator unfold through the memory reflections in Chapter 4, the singular case method facilitates the particular and individualized focus on each memory, treating each as unique yet equally significant in contributing to the assertions and conceptualizations that emerge through this study.

1.6. The Structure of the Thesis

Chapter 1 sets the central aim to be the study of particular memories of my practices as a teacher educator over a decade in various teacher education programs. The study responds to the problem introduced by the “kaleidoscope of notions”—the need to honour experiences in teacher education to combat the reductionist and deterministic tendency to establish set programs and patterns for developing quality teachers. I attempt to slow my gaze in order to view the nature of experiences as filled with insights worth exploring through several lines of thinking—lenses of knowing, currere and dissonance. The chapter also introduces several methods of inquiry—self-study, theoretical inquiry, and singular case study. Through studying my experiences and writing memory reflections, I suggest at the outset that the outcomes of this thesis include knowledge of practice in the form of pedagogical orientations and recurring discordance as a heuristic for learning.

Chapter 2 is organized in three sections around the following questions: Who am I as a learner and educator? What contemporary issues and discords in the field are present in teacher education? What theoretical frameworks apply to this work? This chapter provides the reader glimpses into my early beginnings as a student, teacher and teacher educator to illustrate how I became attuned to dissonance and discordance early in my life experiences. In section 2 of this chapter, I survey literature detailing contemporary issues facing teacher education. This literature reflects another kind of discordance—between the aims of teacher education and the reality of concerns undermining those aims. The literature is used as a way to anchor the analyses and investigations into my memories within the context of problems faced by teacher educators and highlight the lack of conceptual clarity surrounding teacher education demonstrated through the issues discussed in this chapter. Perhaps, as is suggested in final sections, the knowledge of practice can offer possibilities for teacher educators to respond to some of these issues. The chapter closes with literature that extends ideas from Chapter 1 by presenting the frameworks informing the thesis: self-study, critically reflective lenses, and learning from experience.

In Chapter 3, I return to the methods introduced earlier, namely retrospective self-study, singular case method, and theoretical inquiry and describe their gritty application in selecting, generating and analysing memories of my practices as a teacher educator.

Several questions drive the discussions in Chapter 3: What are these methods and why did I choose them? What are the mechanics of these methods and how did I employ them? What limitations did I need to consider in choosing and utilizing these methods? These questions serve to reveal how I constructed knowledge from memories of experiences as a teacher educator teaching student teachers, working with colleagues and connecting my ideas with relevant literature in the field of teacher education. This multifaceted approach to studying my experiences allowed me to sharpen my focus on particular memories rather than summarize the sum total of my work as a teacher educator. By using singular case method, the particular nature of each memory or case was articulated through the memory reflection; the memories included key turning points (Bullock, 2014) in my journey as an educator: “Moments in data analysis that signal a new way of understanding teaching and learning” (p. 105). In tandem with this process of self-study and singular case method, I employed theoretical inquiry to formulate salient questions, engage in inquiry (with a chosen methodological form), and develop a well-articulated language system to describe pedagogical orientations and propose a conceptualization of a cycle of discordance.

Chapter 4 provides the evidence of this study—the memories of discordant experiences, articulated as *memory reflections* through methods described in Chapter 3. The memories are chosen because of particular qualities they share: a) they are engaging and interesting; b) they are, at times, problematic, ironic, disconcerting, and even traumatic yet informative to the ideas I elaborate on in later chapters; and, c) all hold equal status in terms of their importance despite their inherent uniqueness. To honour their uniqueness, the memories are written in different forms, some using journals interspersed with literature, while others were presented as a chronological series of events. By applying the methods outlined in previous chapters, the *memory reflections* become evidence towards the development of assertions and understandings about practice presented in the final chapter.

Chapter 5 offers the reader a way of understanding the knowledge that emerged from the study of my memories as a teacher educator—as *pedagogical orientations* that were embedded in and surfaced through the memory reflections. These orientations are named in the final chapter as ‘knowledge about practice’ developed from the self-study of my practices as a teacher educator. The upshot is that knowledge of practice, named as particular pedagogical orientations is informed by the recurring discordance that featured

consistently throughout my experiences as a teacher educator. The resulting conceptualization of a cycle of discordance as a heuristic for living through and learning from experience offers the reader a way to understand how I learned from my practices and grew and transformed as a teacher educator. The final chapter offers a response to the original problem: How can the self-study of memories of my experiences as a teacher educator contribute to understanding the “kaleidoscope of notions” driving teacher education and how can the outcome of this exploration inform other teacher educators? The chapter concludes with implications for teacher educators and teacher education and poses questions for further study.

1.7. Transitions

In closing the first chapter, I contend that the first and principle foundation for examining my memories as a teacher educator is recognizing the potential of *experience to be my teacher*. In various roles in the span of a decade, attention to and sustained engagement in my practices with student teachers, colleagues, and teachers in the field has stretched me in ways I had not imagined previous to this journey. That *stretch* opened up possibilities and questions that were both interesting and worth examining as my knowledge about teacher education and teacher development grew from experience. I was undergoing transformation in that stretch, discovering new and hidden identities as an educator, innovating my practices, and becoming fully alive in my day to day teaching. That stretch also unhinged me from constraints of self-imposed expectations and gave me the freedom for exploring possibilities and encouraged me to step into and be fully immersed in the discordance and dissonance that were consistently present in my practices as a teacher educator. Berry (2007) conceptualizes the messy work of studying “teaching about teaching” as full of “tensions”, with feelings of turmoil, unease, and confusion characterizing the work of teacher educators. By conceptualizing it in this way, I come to my own terms in naming and describing the pedagogical orientations as knowledge of practice of teaching about teaching. Such knowledge, as I argue in the final sections of the thesis, may be helpful in bringing clarity to the “indeterminate swampy zone” of teacher education practices (Schön, 1987, p. 3). The following chapters attempt to illustrate the potential of experiences to act as bases for knowledge about self and practices as a teacher educator.

Chapter 2.

Cultivating a Passion for Discordance

2.1. Situating My ‘Self’ in the Work

As a self-study, I begin with the ‘self’ by paying homage in this chapter to personal and professional experiences that influenced my growth and transformation as an educator. Early in my learning journey, I honed a passion for learning from experiences that were particularly perturbing or disruptive to my thinking. From the moments of becoming Canadian, setting foot in a new country at the young age of four to the moments of transition from teacher to teacher educator, each memory shares the common features of discordance and potential for learning, representing my coming to terms in order to make sense of the world around me. The memories are connected in that each reflects a kind of *immigrant experience*—not in a literal sense, but metaphorically as I negotiated the foreign and familiar of new identities and contexts shaped by the changing cultures in which I found myself with each experience. Whether coming to Canada at a young age or shifting from teaching science in a conventional school structure to an self-directed learning model, each presented me with the opportunity to enhance my language, develop new ways of being and living, form new relationships, construct new practices, and begin to understand the epistemological uniqueness of each context.

These early reflections represent attention to discordance and the value of learning from experience that informs my views to this day as a teacher educator. I learned to “stand outside” myself (Brookfield, 1995) and acknowledge the *immigrant experience* as significant in the process of coming to terms with discordance. The self-study is rooted in early memory reflections—how I learn from and make sense of particular events in my life reveals to the reader the beginnings of ideas that ultimately lead to the outcomes of this study.

2.2. Early Memory Reflections

2.2.1. Becoming Canadian

Like many first generation immigrants who had arrived at the cusp of Prime Minister Pierre Elliot Trudeau's vision of a multicultural Canada in the early 1970's (Egbo, 2009), I began a journey of *becoming* early in my life. Becoming a citizen came to mean I belonged to a nation and a community that was both pleasantly welcoming and provocatively unfamiliar. Becoming Canadian meant that the new place called home was now shaping me, influencing who I was and how I would begin to see the world around me. Becoming was a process that, unknowingly at the time, led to my own awareness of how my life would continue to be a dynamic interplay between my shifting identity, the contexts in which I was participating, and my experiences. As a young child at the time, some of my first experiences were in pre-schools housed in the basements of churches and in schools as part of 'New Canadians' classes. I vividly remember wearing my favourite frocks to school, the biscuits and juice we were given by our teacher at morning recess, singing nursery rhymes, holding hands with 'Canadian' children, and the long cold walks through the snow-filled streets of a small town in northern British Columbia (BC) where my family began life in Canada. I remember Sunday picnics at Hirsch Creek Park with other families new to Canada, where the familiar and sweet smells of Sandalwood-scented aftershave and spiced chai filled the air. Being a student in elementary classrooms with peers and teachers seemed to catalyze the process of becoming Canadian through the prism of learning to be a Canadian student. I developed language, learned rituals and practiced behaviours through my time in classrooms, as though they represented the totality of what it meant to be Canadian at the time. Yet, I also lived in the spaces between home, school, family and community giving rise to the *in between-ness* that had its beginnings in my early years as a new Canadian learning to negotiate boundaries, navigate new terrain, and broker from one community and place to another. My identity formed in the context of cultural dissonance and cultural negotiation as I learned how to *become* and grow as a first generation Canadian citizen within the dynamic process of living in and across cultural boundaries. As a young child, I was not fully aware of the extent to which I was living in the 'in between' and the degree of cultural negotiation permeating my life, but as time passed, I realized my perspectives on identity construction

and transformation were rooted in these processes and ultimately shaped my practices as a teacher educator.

This snapshot of early experiences is germane to discussions in this study for several reasons. The memory of “Becoming Canadian” revealed my conviction that education, in the case of being a student for the first time in Canada, was integral to shaping my sense of belonging and facilitating my participation in communities. Becoming also gave rise to the *in between-ness* that led to developing a critical lens on identity, culture and the role of education. Living in between spaces and contexts lead me to believe that my own experiences with cultural negotiation were rich sources of insight and that these experiences played a vital role in shaping my perspectives as an educator and my practices later in teacher education. I realized the value of living through the boundaries of disparate yet related contexts, such as school and home that made up my world at the time. By experiencing and reflecting on the process of becoming a Canadian citizen, identity construction and negotiation became central features of my life and impacted the way in which I later came to view teacher development. Although early memories were seeded with discordance, brought on by contexts filled with the new and unfamiliar at a young age, the discordance persisted into other realms and ultimately influenced my professional vision and practices as a teacher educator. In ways unbeknownst to me at the time, my journey reflected aspects of Palmer’s (1998) concepts of integrity and interconnectedness: who I was becoming shaped how I viewed the world, what I believed, and how I carried out my practices as a teacher educator.

2.2.2. Rethinking schools

Prior to my roles in teacher education, I taught secondary school science for 12 years in a variety of contexts. In 1992, following three years of teaching in conventional block-scheduled and semester-based school structures, I joined a new school in my district built around a self-paced, self-directed learning model. The educational structure of the school combined a multi-graded open learning environment, a teacher advisory system, curriculum delivery in the form of learning packages, and instructional practices defined in my master’s thesis as a series of “learning conversations” as educational features of the school. The new context created considerable dissonance in my understanding of the role and responsibilities of a teacher. My understanding of the norms of effective teaching—instructional methods, student learning and assessment, curricular

planning and delivery—was shattered by the very different context in which I found myself, thus exposing the nuances of teaching and learning in ways that had remained hidden beneath the weight of conventional structures in my previous schools and teaching experiences. I began to question everything about my practices as an educator: Who is the teacher? What is the role of curriculum? What does learning look like in the school? What role does power begin to play in pedagogy? How does the physical architecture influence learning? My images of teaching and teacher identity, or “teachers’ epistemologies” (Matthews, 1994), were disrupted by the unfamiliar and new norms of the school. This was a new land of learning—another *immigrant experience* that required fundamental paradigmatic shifts in my identity and practices as a teacher at the time.

The dissonance of shifting from a conventional classroom model to a self-paced, self-directed open learning model led me to reorient my practice to include team teaching in multi-grade open area classrooms with small groups and in one-to-one arrangements. This environment put into question my existing knowledge about teaching, learning and classroom practices in such a substantive way that it led to my entry into a graduate program. I completed graduate studies that focused on identifying salient features of the pedagogies at play in a context substantively different than the one I had been prepared for in my own teacher education program. Representing pedagogies in the form of “learning conversations”, as an outcome of my master’s research, created an opportunity to envision education beyond the confines of pedagogies and practices found in conventional school structures. There was an entirely different dynamic at play in my practice—a different set of ‘language games’—one that prompted me to question basic assumptions about knowledge, teaching and learning practices and the role of students and teachers in a non-conventional pedagogical experience. From “learning conversations” emerged a pedagogy that was as much about voice, power, and relationships as it was about teaching and learning science. I asserted that learning conversations required all of these dimensions in the pedagogical moments between students and teachers. I realized then that discordance was instrumental in examining my experiences of changing school settings and engaging in graduate level research.

At the time, I was also actively involved in science education, attending and presenting at local and provincial conferences to feed my interest in the nature of science (NoS) in relation to teaching and student learning. I drew on my own science teacher education experiences by incorporating discrepant events and demonstrations to promote

inquiry, yet these practices were within a conventional dynamic of teacher-led lessons. In the context of shifting to a different educational structure, I was relearning science in ways that were precipitated by the restructured curriculum in the new school. I began to appreciate the NoS as coming to life through the “learning conversations” with students where they were invited to talk about science, to give their own language to describe scientific phenomena, and to demonstrate their understanding of science in multiple ways. I would not imply that learning science through learning conversations was somehow *better*; rather, the science that students learned was qualitatively different as a result of the unique pedagogy and context. Concepts were articulated by students using language that was different than what I as the teacher was using to describe phenomena. The shift to students explaining science through learning conversations was subtle but salient at the time—how students learned science and how they represented their learning were fundamentally connected to the NoS. I needed to revisit my own understandings of the NoS and view science differently as a teacher in order to teach in this context. Once again, the discordance around my views of science—my ‘teacher epistemology’—was a factor in shifting my approaches to teaching and learning at the school.

2.2.3. From teacher to teacher educator: Setting the stage for memory work

My interests in identity development, borne out of cultural negotiation as a first generation immigrant and the exploration of my role as a science teacher in a non-conventional educational structure, were fueled by the larger transformations that occurred as I shifted from being a classroom teacher to a teacher educator. While early memories prompted me to reflect on my identity, beliefs and conceptions in the context of experiencing discordance, the process of reflecting and transforming continued throughout my years as a teacher educator. As I joined a faculty of education in a large western university, first as a faculty associate and then as a coordinator in the university’s teacher education program, and later in a smaller university as a faculty member, my lenses for learning from experience and attending to discordance were firmly in place.

My roles as a faculty associate and coordinator in the larger teacher education program introduced me to a programmatic structure that was considerably different than what I had experienced in my own preparation as a teacher years earlier. The program was organized as a one year, post-baccalaureate program taught by a collaborative team

of seconded teachers, faculty members and coordinators. Within each team, seconded teachers taught a module of 32 student teachers through a combination of university based seminars and in school experiences, beginning with staggered one week, two week, and three week practicums in the first semester and culminating in a 10 week practicum in the second semester. Using a differentiated staffing model, master teachers seconded from schools were paired with faculty from within the university to create a program for student teachers that reflected current and innovative theories and practices. In place of a series of courses taken with different instructors, the modular structure meant that student teachers worked with the same team of seconded teachers and faculty for an entire semester. The instructional team co-taught and designed classes as semester long seminars with content and activities informed by four dispositions—reflective capacity, critical-mindedness, other-directedness, and pedagogical sensitivity (Smith, 2004). A number of community modules were located in schools in addition to those based at the university, with each module organized around themes such as “learning through fine arts”, “environmental education”, or “literacy and languages”.

My growth and transformations as a teacher educator continued as I relocated to a smaller university as a faculty member in a post-degree bachelor of education program for prospective teachers. The program was course-driven and cohort based—coursework was taught by a number of different instructors to the same cohort of student teachers. There were some opportunities for co-teaching with other teacher education faculty but generally the instructional arrangement was one instructor per course. The practicums were divided into three distinct sections: A preliminary three-day orientation to schools conducted by groups of student teachers during the first weeks of September; a five-week practicum focusing on student teachers learning about school culture and community; and a final certification practicum where student teachers were supervised and evaluated by a teacher mentor at the school and a faculty mentor from the university in relation to program goals. The course topics and pedagogical arrangements were informed by the five program values of critical thinking, pedagogical sensitivity, reflective capacity, integration of knowledge and practice and social justice.

My role as a teacher educator in these two contexts prompted reflection on my practices in ways that I had not experienced as a classroom teacher: I was prompted to think about *becoming* a teacher educator (Andrews, Holborn & Wideen, 1988). I began to articulate and enact practices that I believed to be most effective in the development

and growth of the student teachers in teacher education programs. Through reflection on my teaching experiences and interrogating my own philosophies about education, I began to clarify beliefs and practices that I thought were most important for teaching about teaching. Yet, I struggled with the bigger questions of my practice as I gained experience, questions about student teacher identity and knowledge construction, diversity issues in teacher education and science teacher epistemologies. These questions lead to further study in a doctoral program. I began to develop language and concepts to articulate my practices and experiences as a teacher educator as a way to describe my inner thoughts and assertions in a more public forum. I identified concepts such as ‘epistemological literacy’ to name the challenges of weaving together pedagogy, content knowledge in science, and the development of a science teacher identity. I wrote about hybridity to better understand the challenges faced by foreign-trained teachers (FTTs) who were seeking re-certification as teachers. While these were early conceptualizations, over time, my experiences led to more complex questions and understandings that served to inform my roles and activities at the time. For example, I grew in my understanding of inquiry as an embodiment of dispositional and intellectual characteristics that could change the ways in which learning and content were viewed. Within the zone of conceptualizing my day-to-day practices as a teacher educator, supported by the doctoral program, I reinforced the value of *learning from experience* and attending to discordance. The beginnings of self-study research were emerging.

2.2.4. Challenge and resilience

In the context of in-depth engagement with concepts, ideas, and actions as a teacher educator, I experienced several challenging events in my personal life. In 2011, as my eldest daughter was about to embark on her post-secondary studies, she became ill after reacting to antibiotics and was later diagnosed with a conglomerate of autoimmune disorders. The maze of possibilities and probabilities—from the first symptoms to the final diagnoses—created conditions that prompted transformation in me as a parent as my understanding of the pedagogical nature of the parent-child relationship was suddenly brought to the fore. I had always believed that my role as an educator shaped my life as a parent and vice versa. I realized that teaching my daughter about living with a life-altering illness was deeply pedagogical—it drew on my understanding of the roles of parent, child, and knowledge and reoriented them in the context of transforming our collective

perspectives about what it meant to be ill. We constructed our own language about living with illness as a journey to self-awareness about health, body, mind and spirit. We talked about “life-altering, not life-ending” in order to move forward each day. The journey was not a spiritual endeavour, per se, but a deeply personal one calling on both of us to transform our identities in the realm of new norms of healthy living. I often referred to my own transformation as a parent of a child living with a lifelong illness as parent ‘two point zero’—my next version of parenthood with a different set of language games and conceptual schemes to inform our relationship. Reflection grew as a mechanism for finding solace in times of difficulty. I wrote in my journal about “how when the rug gets pulled out from below your feet, you find a new way to walk on unfamiliar ground” (Personal Communication, August 29, 2012) as I recalled the months following the initial onset of disease. The unfamiliarity of the experience became the impetus to change the ways in which I walked or enacted my parenthood. My language changed from definitive to tentative, from determinate to questioning, and from an assumed confidence to humility about life as a whole. As my reflection on past events deepened, I moved from anger to acceptance and began to find familiarity and comfort in the unfamiliar ground of walking this journey as a parent. I gained strength from reflecting as it revealed to me a kind of beauty in the new set of norms—a new strength that was previously untapped and unexploited.

Unfortunately, I once again had to draw on my strength as my spouse was diagnosed with cancer in 2014. While the process of diagnosis to treatment was much more direct and certain, my world was once again shattered by the news. This time, however, I recall a very specific moment in which sense-making took over in my journey to understand and cope with the diagnosis. As I sat in the waiting room at the cancer agency, I met a woman whose 26-year-old son had been diagnosed with Non-Hodgkin’s Lymphoma. We both sat staring at the wall of posters about cancer prevention, research programs, help lines and support networks, quietly conscious of each other as we came to grips with the news of our loved ones waiting to be processed for ensuing treatments. As we started up conversation, the words swelled in me: “It’s like the kaleidoscope of our lives, full of these beautiful patterns just turned without us knowing—the patterns are shattered, bits are everywhere, and I don’t recognize my life anymore”. I later wrote about the experience in my journal as the way I defined trauma: the turning of a kaleidoscope into an unrecognizable pattern of a life that was not mine.

I share these experiences to give the reader a glimpse into the ways in which I come to terms with memories and experiences and how I utilize the capacities I have honed as an educator over the years. The difficulty, while real and ongoing at a personal level, is also seen to be educational in that these experiences have taught me more about who I am as a parent and spouse, and ultimately, informed my life as an educator. I learned about identity, transformation, challenge and resilience and honed my affinity for *learning from experience* and attending to dissonance and discordance. In these deeply personal experiences, the beginnings of this study were also taking form.

2.3. Moving Forward

Throughout the memories presented in this chapter, I continued to contemplate the value of discordance and learning from experience on my views as an educator. This thesis is the product of that contemplation and, in turn, an attempt to honour of my journey over the years. The memories I share in Chapter 4 highlight experiences that significantly influenced my practices and identity as a teacher educator and strengthened my belief in the value of experiences as generative and transformative. As I reflected on and wrote memory reflections about particular experiences as a teacher educator, the beginnings of the conceptualizations were taking shape. However, I realized I needed to situate my contemplation within the realm of literature in the field of teacher education and thus, chose to examine literature surrounding teacher education and the issues faced by teacher educators. I aimed to learn about the shortcomings and tensions facing teacher education and to set the stage for the relevance and purpose of examining my memories.

2.4. Literature Review

The remainder of the chapter presents a survey of the literature in two sections. The first section addresses contemporary concerns and shortcomings in the field of teacher education—discordances within the field as a backdrop to subsequent analyses. A vast range of issues and concerns can be found in the literature, much of which remains beyond the scope of this thesis. However, the following section presents several relevant concerns in the literature as background and justification for exploring two important questions: Why study my experiences as a teacher educator in the first place (and can what I learn shed light on these concerns) and why is there a need for conceptualizing a

cycle of discordance (or any conceptualizations at all)? The second section introduces theoretical underpinnings of the thesis, namely, self-study, critically reflective lenses and the authority of experience.

2.5. Part 1: Discordance in the Field of Teacher Education

It appears that issues in teacher education tend to result from program shortfalls in the areas of design, aims, organization, content or orientation or combinations of these. They can also result from the limited ability of teacher education institutions and faculties to mitigate effects of political and policy decisions (Cochran-Smith, 2004). Although the goal is to locate the design and delivery of teacher education programs in the hands of the teacher educators and institutions, external forces such as changes in governmental policies and views of local school and municipal boards continue to plague teacher education reform efforts. The policies often reflect particular world views that contradict the more liberal and democratic undertones of teacher education curricula.

As introduced earlier in Chapter 1, Wang, Lin, Spalding, Klecka, and Odell (2011) provide additional support to suggest that teacher education programs continue to struggle with producing quality teachers. Despite decades of research on teacher education programming, curriculum and teacher development, the authors contend that the literature simply serves to create a “kaleidoscope of notions” that inform teacher education curriculum and programming. These notions are based on two important assumptions: quality teachers are teachers whose effectiveness can be measured by their students’ learning successes and quality teachers are able to lessen the achievement gap between mainstream and marginalized groups. The authors suggest four approaches to reforming teacher education. The first is based on a cognitive perspective on teacher development that calls for a focus on reflection, shifting perspectives, counterevidence and changing beliefs (Wideen, Mayer-Smith & Moon, 1998) to effectively meet the aim of producing quality teachers. While there is some merit to the assumption based on the prevalence of reflective practice in teacher education and value placed on constructivist pedagogies to engage student teachers in conceptual transformation, the research on this approach is inconclusive and limited. The second approach is one that engages student teachers in developing pedagogical content knowledge (Shulman, 1987) by analysing pedagogical practices and instructional models. However, little correlation is found between programs that focus on pedagogical content knowledge and the production of quality teachers. A

third approach of teacher education programs is a focus on experiential learning and apprenticeship whereby student teachers spend extended periods of time with classroom mentors who not only mentor but also actively participate in facilitating seminars in conjunction with teacher education faculty. A situated approach is impacted by variation in both the mentorship process and practicum context leading to continued scepticism about whether integrating curriculum is effective in producing quality teachers. The fourth approach involves programs that are informed by a critical race theory and critical pedagogy focus in the curriculum. The research on such programs, perceived as effective in creating self-awareness of dispositions, beliefs and attitudes regarding marginalized members of the community, suffers from a lack of consistency.

The limitations are further complicated by the prevalence of contradictory aims in teacher education. Hollins and Guzman (2005) remind us in their review of teacher education programs of the need to prepare teachers whose capabilities represent skills, attitudes, and knowledge to ensure their success in the profession; their preparation must mirror quality teaching practices in the K-12 system. This seemingly contradicts the aim of developing teachers as change agents. Programs are increasingly called on to produce teachers who engage in civic issues and bring these local and global concerns to their classrooms in an effort to foster agency in their students (Mirra & Morrell, 2011). Teachers' roles as change agents are predicated on schools to be sites for democracy and student empowerment to meet the challenges of a complex and changing global context. Once again, quality teaching and what counts as best practice is caught up in the fragmented vision—a kaleidoscope of notions—of the aims of teacher education.

Issues and concerns persist despite earnest efforts to innovate and reform teacher education. From the survey of literature, three main discords are discussed in the following sections and categorized as: *program and profession*, *epistemological literacy in science*, and *cultural responsiveness*.

2.5.1. Preface: The aims of teacher education programs

At the outset, it is important to understand how the aim of teacher education programs is envisioned. Despite the efforts of contemporary teacher education programs to produce well prepared, professionally qualified and pedagogically competent teachers, widespread lack of faith persists in teacher education programs to meet this aim: Teachers

who are capable of responding to a broad range of issues, to meet the demands of producing a literate society and for shaping future citizens who are critically aware and responsive to their own evolution as productive citizens (Velligas, 2007; Cochrane-Smith, 2004; Zeichner, 2005). As Darling-Hammond (2000) articulates, effective teacher education curricula must “prepare prospective teachers in studying research and conducting their own inquiries through cases, action research, and the development of structured portfolios about practice” (p. 170). She identifies several issues plaguing teacher education: a seeming disconnect between content and pedagogy and the inadequate length of time for clinical training and weak course content that “passes along folklore rather than systematically developed knowledge about teaching” (Darling-Hammond, 2000, p. 169). Such concerns arise from general perceptions of teacher education programs as well as from within the profession by teachers who reflect negatively on their own teacher training (Cochrane-Smith, 1999; Zeichner, 2005).

Quality teachers are also defined as those having positive impacts on the academic achievements of their students (Darling-Hammond & Youngs, 2002), a notion that assumes the responsibility of producing quality teachers rests squarely on teacher education programs rather than on the teaching profession. Additionally, there exists a belief that teacher induction and ongoing professional development have a lesser impact on teacher quality; the foundations for effective, quality teaching are developed and rest squarely in the domain of pre-service education (Darling-Hammond & Youngs, 2002). The challenge with identifying student academic success as a function of quality teaching is that quality teaching is only a singular factor among many that can impact student success, including factors related to students’ socio-economic status and cultural background (Wang, et al., 2011).

While there is little disagreement that the goal of teacher education is to produce quality teachers, disparate, diverse and contradictory approaches persist in reaching this aim (Wang, et. al, 2011; Cochrane-Smith & Fries, 2001). Questions arising from the initial analysis of this issue include: What approaches are used to develop teacher education curricula and programming and what is problematic about them? What underlying assumptions drive these problems of curriculum development? Why do teacher education programs continue to struggle to produce quality teachers? What concerns impede innovation and reform of teacher education? What are the persistent chasms, tensions and limitations found in the research on teacher education? What is missing in the

debates about developing quality teachers? I explore these questions in the following sections to shed light on the tensions and discords prevalent in teacher education.

As a footnote, I situate following sections of the literature review as “conceptual threshold crossing” between distinct yet related topics in teacher education. As Wisker (2015) describes, a good literature review is one that:

Shows the doctoral author moving between research activity, reading, interpretation of theoretical perspectives, the importance of conceptual and interpretive findings, and the actual processes of writing. Both the iterative processes and the articulation together enable and evidence development, which I argue can be seen as conceptual threshold expressing the contribution to understanding, meaning and knowledge. (p. 64).

Crossing conceptual thresholds aptly describes the process undertaken to present and analyse literature related to the thesis. In weaving together a complex web of ideas, I attempt to identify concerns facing teacher educators across several areas of literature in teacher education. The task remains to present content related to current issues, but to do so in a manner that provides sufficient background and appropriate foundation for studying my practices as a teacher educator.

2.5.2. The program and practicum

The chasm between the university and the professional field is widely researched and documented in the literature on teacher education (Zeichner, 2005; Cochrane-Smith & Lytle, 1999; Darling-Hammond & Richardson, 2009; Feiman-Nemser, 2001). Predominantly, the dichotomy is attributed to a series of disconnects related to expectations, aims and learning outcomes characterized as the “two worlds pitfall” (Feiman-Nemser & Buchmann, 1985). Regardless of the reasons, it is clear that the divide between the programs at university and the professional context persists in even the most innovative and responsive of teacher education programs. Despite attempts to minimize the divide by addressing specific concerns through curricular design and delivery, such as placing faculty in field supervision roles to enhance continuity and coherence between university lectures and school practicums, a combination of factors continues to drive a wedge between university programs and the profession. Three specific phenomena are suggested to contribute to the divide, namely the challenges faced by differences in profession and university cultures, counter expectations, and the theory-practice chasm.

2.5.2.1. Difference in cultures

Considerable evidence exists to suggest that many teacher education programs continue to function in traditionalist delivery models in which knowledge about teaching is transmitted by instructors to students and the application of that knowledge is left to school-based mentors in the practicum (Smagorinsky, Cook, Moore, Jackson, & Fry, 2004, Sleeter, 2001; Cochran-Smith, 2004; Darling-Hammond, 2000). The model rests on a view that teacher education is a “training problem” (Cochran-Smith, 2004), whereby universities rely on empirical data to determine acceptable behaviours of teachers and establish coursework to train prospective teachers in these behaviours. For example, questioning techniques become a training aim. The traditionalist model of teacher training reinforces perceptions that the university creates unintellectual and a-theoretical views of teaching (Cochran-Smith, 2004) which are further disregarded due to their inherent lack of effectiveness in the field.

Kim, Andrews and Carr (2004) define traditional curriculum in teacher education as non-integrated courses, linear arrangement of theory before practice and lacking connection between university faculty and school settings. Clearly, within the traditionalist model, the perception is that teacher development is a function of learning *about* teaching at the university and learning *to* teach in school practicums. Assessment models, which are cumulative, test-driven and teacher enforced, characterize a traditional program and serve to expand the divide between university and school cultures. Furthermore, traditionalist programs are perceived as decontextualized and out of touch with the realities of teaching in schools and practicum mentors and as such the role of the university is disregarded by school professionals (Laursen, 2007).

University programs and school cultures differ in that programs are classic sites of academic knowledge while schools are sites of practical and active learning. In university courses, students can encounter an array of courses and lectures on model pedagogies, often with little or no modeling of these practices, and faculty who, for reasons of time constraints or interest, provide minimal or no supervision in practicums. Hence, the transfer of knowledge about teaching to applications in practice is left to student teachers and in programs with traditional models, there is little chance that students are able to be self-reflective or critically aware to apply or blend theory and practice on their own in practicum situations (Darling-Hammond & Youngs, 2002).

2.5.2.2. Counter expectations

The literature suggests that expectations differ considerably between the program and the practicum in teachers' knowledge and competencies. Kosnik (2001) notes that technical skills and the ability to manage classes, organize classroom experiences, and relate to students are highly valued competencies in the practicum. These override and subsume the work of the university where theoretical understanding about education and beliefs are debated and explored. Smagorinsky, Cook, Moore, Jackson & Fry (2004) employ activity theory to explain the ways in which student teachers appropriate different sets of pedagogical skills in these two settings, and they state "these two settings, are responsive to different constituents, have different overriding motives, respond to different ideals and consequently emphasize different values and practices, with the university setting more concerned with ideals and schools with their gritty application" (p. 9). Clearly, university programs and school based practicums are understood as distinct cultures on this basis alone. However, the differences also manifest in the ways in which individuals interact with student teachers in these two settings. During practicum, mentor teachers' interactions encourage the development and expression of teaching behaviours that encourage student teachers' conformity to the profession. Cochran-Smith and Lytle (1990) refer to this as a functionalist tradition of socialization, a classic form of induction. Mentors' feedback and professional guidance about teaching practices, such as management strategies, is influential in determining the most "useful learning" during teacher education (Laursen, 2007). Indeed, there is greater value placed on the practical work of teaching and learning *to* teach, than in learning *about* teaching (Segall, 2001).

Another issue often arising from counter expectations is contradictory forms of assessment. In practicum settings, the assessment is formative, feedback is openly discussed and students are prompted to reflect on their lessons for self-growth. While practicum assessments may still focus on checklist-type feedback, the range extends to include anecdotal and narrative observations of student teachers' lessons. Conversely, at the university, assessment often takes the form of cumulative tests and individual projects. Traditional forms of assessment exist even when teacher education programs are changed to reflect a closer alignment with teaching practicums through the inclusion of portfolios and micro-teach activities as forms of assessment.

2.5.2.3. *Theory/practice chasm*

Within the category of differences between the program and the practicum is what Clandinin and Connelly (1995) refer to as the “significant epistemological dilemma” between theory and practice. Abundant literature and research exists on the effects and conceptions of the theory-practice dichotomy in relation to teacher education (Shulman, 1987; Segall, 2001; Beck & Kosnik, 2002a; Korthagen & Kessels, 1999; Cochrane-Smith & Lytle, 1999; Clandinin & Connelly, 1995). Overwhelmingly, the literature suggests that the chasm persists along the continuum of teacher education programs, even those with strong constructivist underpinnings and integrated faculty school partnerships. Moore (2003) states that although field experiences hold potential for connecting theory and practice, demands of procedural and planning concerns in practicum shift the focus away from the inquiry orientation encouraged at the university. According to Moore (2003), the gap also manifests in the student teachers themselves—they view theory as decontextualized knowledge about teaching that is not responsive to situations, thus relegating theory to the realm of the ideal and unrealistic. Practical knowledge, on the other hand, emerges from activity, from the act of teaching and the sense that the “actor” makes of the practice (Munby, 1982). Practice, as a body of knowledge, is perceived as more useful, authentic, contextualized and responsive to classroom teaching and learning situations. Regardless of the attempts to link theory and practice and build an integrated conception, student teachers are not convinced, by either the virtue of prior beliefs or by the influence of their mentor teachers in the professions, that theory and practice can be mutually dependent and integrated. Indeed, they even question the need to overcome this dichotomy given their perception of theory as dispensable (Hascher, Cocard & Mosher, 2004).

Another reason for the persistent gap is student teachers’ perception that “good teaching” possesses more practical knowledge than theoretical. In terms of success, student teachers gauge effective programs where practicum is the site for developing effective teaching and, in fact, they make claims such as “I learned more in one day in the school than I did a whole semester at the university” (Korthagen & Kessels, 1999). Student teachers, who place value on practical knowledge, hold a “tool” conception of theory—theory is a tool to understand practical knowledge (Korthagen, 2001).

Korthagen and Kessels (1999) categorize the theory/practice chasm as a transfer problem based on three perspectives: prior knowledge, usefulness of the theory, and the nature of knowledge. In terms of prior knowledge, although Gordon (2008) suggests that conceptual change in teacher education is valuable, yet changing student teachers' prior conceptions is difficult. He posits that they resist integration of new conceptions taught in their programs, particularly if they are challenged further by differing worldviews. Transferring theoretical knowledge to practical situations is made difficult unless the theory is deemed useful in practical situations. For example, the theory behind inquiry teaching is accepted as a useful theory if it directly impacts practical applications in the classroom. A third cause of the transfer problem is related to the nature of knowledge itself. Student teachers in the practicum and in professional life are constantly developing what Korthagen and Kessels (1999) refer to as "action-guiding knowledge" which is knowledge that is immediate and responsive to the multitude of complexities of the classroom. Such knowledge is fundamentally seen as different from the abstract and general schematic theories presented by teacher educators and thus the two remain unconnected and non-transferable.

Korthagen and Kessels (1999) build on this final point in their discussions of *phronesis* and *episteme* and suggest that another cause of the chasm between theory and practice is a dual understanding of the word "theory". *Episteme* views theory as more conceptual, in which concepts are generalizable in a variety of circumstances. *Phronesis* views theory as situational, emerging from specific situations characterized by perceptions of how to act in those situations. The different views of theory are then informative to the last point of difference. If students view the theory as only epistemic, then theory learned in university programs is rendered less useful to the practice of teaching. If it is viewed as solely *phronesis*, then theory is purely situation specific and therefore generally not applicable to practice. Clearly, the case they make is that the dichotomy is not simply a function of the university culture being different than the school culture; rather, student teachers conceive of theory differently based on epistemology.

Finally, underlying these conditions of the chasm is the portrayal of theory and practice to teacher educators and student teachers. When presented as theory *and* practice, they are viewed as distinct and separate. When presented as theory *in* practice, it is implied that practice is the root of all theory and theory is embedded in practice. Yet another conception is theory *about* practice which intimates that theory is used to describe

and account for practice. Still other conceptions propose that theory-practice is a construct of merging fields of knowledge (Korthagen & Kessels, 1999). Even though these conceptions permeate the literature, there is still little or no consensus on how these concepts are related semantically or conceptually adding further confusion to the attempts to clarify this chasm.

Cochrane-Smith and Lytle (1999; 2011) provide another way of identifying the epistemological concerns related to theory and practice by identifying three forms of knowledge: knowledge in practice, for practice and of practice. These represent different positions in relation to conceptions of teacher learning and thus enhance disconnects between the kind of learning that occurs in the practicum and in the university program. They argue that knowledge for practice consists of researchers generating theories and codified knowledge that can be used by teachers to develop and improve practice. Knowledge in practice is embedded in and emerges from the practical work of teachers in the classrooms and therefore is generated through action rather than through research as in the previous conception. They suggest that knowledge of practice is knowledge that originates from teachers observing and reflecting on their practice and on the profession, treating their classrooms as “sites for intentional investigation” (Cochrane-Smith & Lytle, 1999, p. 250) in order to develop sophisticated and nuanced understanding about teaching in learning in order to connect their learning to broader social, political and cultural issues.

By distinguishing knowledge into these forms, Cochrane-Smith and Lytle (1999) offer further support for the compartmentalized view of knowledge as it pertains to learning about teaching. Indeed, even the description of learning *about* teaching and learning *to* teach reflect the problematic nature of these distinctions. Clearly, their conception stimulates an image that the kind of knowledge developed in schools is more practical in nature whereas knowledge developed within university programs leans more towards theoretical and reflective knowledge.

In summary, the chasm between program and practicum is real. The distinctions are not easily overcome even when programs are reformed or are considered innovative by fusing practices, pedagogy and assessments across the two cultures. Fundamentally, it is about competing or differing aims. If the university program’s major role is teaching the content of teaching, principles of subject specific methodology and conceptual frameworks for teaching and learning, then it is difficult to view it as a place to learn *to*

teach. Vice versa, there is a limited view of school practicum as sites of both theoretical and conceptual knowledge—they are clearly the places where students learn the activities, behaviours, skills and dispositions of teachers in so far as they are socially acceptable within the profession. Further, the mentorship in practicum is often deemed more valuable than what student teachers learn in the university setting.

2.5.3. Epistemological literacy

In the following sections, I draw on science education literature and the experience of my role as a science teacher educator to illustrate another set of issues in the preparation of teachers: weak subject area knowledge and inadequate subject methodologies. Particularly in science education, the literature suggests that beginning teachers emerge from a range of programs with a rote understanding of subject matter and simplified conceptions of curriculum (Abd-El-Khalick & Lederman, 2000; Abd-El-Khalick, Bell & Lederman, 1998). The term, *epistemological literacy*, is one I suggest describes the kind of knowledge student teachers need to develop and possess in order to reject rote and simplified conceptions of content and curriculum. For example, in teaching science, an *epistemologically literate* teacher brings together pedagogical awareness and an understanding of the nature of science and enacts her literacy through effective designs for learning.

In science teacher education, there is significant research in preparing teachers to be epistemologically literate. Most studies aim to understand the kinds of experiences and practices that enhance teachers' pedagogical practices in science to improve overall learning. As Kang, Kim, Choi & Noh (2010) suggest, "preservice teachers could benefit from explicit opportunities to navigate the border between learning and teaching science; such opportunities could deepen their conceptions of inquiry beyond those exclusively fashioned as either student or teacher" (p. 427). Additional studies range from using constructivist perspectives in curriculum design (Hassard, 2005), developing teachers' understanding of the nature of science (Lederman, Abd-El-Khalick, Bell & Schwartz, 2002) to the relationships between teaching and epistemological beliefs (Tsai, 2002) and indicate that initiating change in science education rests on addressing teacher preparation practices, as it is generally accepted that teachers form their core beliefs and pedagogical knowledge during teacher education programs. To illustrate the shortfall in teacher preparation, I focus on two key areas: the impact of the nature of science (NoS)

in science teacher preparation and the image of science held by prospective science teachers as “border crossers” (Aikenhead, 2001).

2.5.3.1. Nature of science

The philosophy of science and science education literature refers to the NoS as the epistemology of science or the values and belief inherent to the development of scientific knowledge (Lederman, 1992). Science for all Americans (AAAS, 1990) outlines three basic components that underlie an adequate understanding of the NoS. The first views science as understandable, yet recognizes that science cannot provide answers to all questions. The second aspect suggests that although scientific inquiry relies on logic and is empirically based, it nevertheless involves imagination and the invention of explanations. The third component emphasizes the social and political aspects of science. The NoS is viewed as an implicit substructure of processes, skills and attitudes to enhance science understanding.

A more detailed definition of the NoS, as noted by Hanuscin, Akerson and Phillipson-Mower (2006), includes the following aspects: (a) scientific knowledge is both reliable (one can have confidence in scientific knowledge) and tentative (subject to change); (b) no single, universal scientific method captures the complexity and diversity of scientific investigations; (c) creativity plays a role in the development of scientific knowledge; (d) there is a relationship between theories and laws; (e) there is a relationship between observations and inferences; (f) although science strives for objectivity, there is always an element of subjectivity in the development of scientific knowledge; and, (g) social and cultural context also plays a role in the development of scientific knowledge (p. 913). The majority of research in science education refers to the following summaries of these aspects: (a) scientific knowledge is tentative; (b) empirically based (based on observations of the natural world); (c) theory-laden, (involves human inference); (d) based on imagination and creativity (in inventing explanations); (e) involves combination of observation and inferences; and (f) is socially and culturally embedded (Lederman, 1992). These conceptions are shared by reform documents such as *Benchmarks for Science Literacy* (American Association for the Advancement of Science [AAAS], 1993) and the *National Science Education Standards* (National Research Council [NRC], 1996), both of which recommend understanding the NoS as a central goal of science education. These conceptions of the NoS imply that scientific inquiries involve processes, thinking skills and

attitudes such as openness, skepticism, analysis, and interpretation (Matthews, 1994; Lederman, 1999). The NoS, in addition to providing a strong foundation for developing science curricula at all levels, also reflects how science functions to explain phenomena of the natural world.

2.5.3.2. Teachers' images of science

A consistent theme in literature on science education is the relationship between the image of science held by teachers and the kind of science education experienced by students. Matthews (1994) refers to teachers' images of science as their epistemology of science which significantly affects the manner in which science is taught. In *Science Teaching: The Role of History and Philosophy of Science*, he states:

All science curricula contain views about nature of science: Images of science that influence what is included in curriculum, how material is taught and how curriculum is assessed. The image of science held by curriculum framers sets the tone of the curriculum, and the image of science held by teachers influences how curriculum is taught and assessed. When spelled out, these images of science become statements about nature of science, or about epistemology of science. (Matthews, 1994, p. 37).

Over the years, science education has come under attack for creating images of science for students that neither consider nor reflect science's epistemology. A majority of classroom teaching seems to perpetuate what Bauer (1992) calls the "myths" of science: science consists of fixed truths about the world derived objectively by a universal, set method, and is little more than the end products of an infallible process collated and transmitted to students in classrooms. Such conceptions, further perpetuated in textbooks, rarely reveal activities of "frontier science"—when science knowledge develops by processes of discovery, inquiry and experimentation as more authentic reflections of its epistemology (Bauer, 1992). Teacher education, and specifically that of science teachers, can be directly implicated in perpetrating these kinds of images (and misconceptions) derived by students. Furthermore, as Aikenhead (2001) suggests, prospective science teachers must be enabled and supported to cross the border between their knowledge of science as students and their knowledge of science as science teachers.

Much of the challenge of science education rests on a fundamental concern: how science is presented, illustrated, explained and articulated to students depends on how

the teacher has made sense of science knowledge. As such, epistemological understanding of science ought to be embraced by teachers in order for students to experience such approaches in their science classes. Curriculum design and delivery ought to become an *extension* of teachers' conceptual and philosophical images of science. For example, students in classic lecture-style and textbook-based pedagogy might experience a description of atomic bonding as the only conception of particle interaction. Contrarily, teachers who introduce students to the various development stages of atomic bonding models and demonstrate chronological differences in evidence engage students in the scientific enterprise. Students are privy to the inner workings of how atomic models develop and are modified over time in consideration of new evidence, and how even current conceptions are probabilistic in nature—that bonding processes rely on conjectures of the nature and position of particles. The tentative nature of knowledge about natural phenomena in this example is arguably more epistemologically accurate (McComas, 1998). By learning the NoS, students gain opportunities to visualize the invisible phenomena of the natural world. Consequently, the task for teacher education is to help teachers reflect on their own processes of understanding NoS to design curriculum that mirrors such processes *with* their students.

The importance of the NoS in science instruction translates into a call for its explicit treatment in teacher education. In accepting a “NoS-rich” approach in science teaching requires teachers to create opportunities for students to understand science as tentative, socially negotiated, subjectively influenced and empirically based (Matthews, 1994; NSTA, 1982). Such approaches encourage teachers to engage students in the processes, skills and attitudes inherent in the development of scientific knowledge. Numerous studies have suggested an explicit-and-reflective approach (Tsai, 2002; Akerson, Abd-El-Khalick & Lederman, 2000) be utilized to surface embedded dimensions of NoS with student teachers while they conduct experiments, discuss their thinking processes, write reflectively about the nature of their learning during these experiments and consider the value of these experiences in collaborative dialogues—all examples which aim to make the NoS more explicit. Such practices in teacher education endeavour to raise student teachers' own understanding of the NoS as well as to get at the deeper philosophical underpinnings of the scientific enterprise.

2.5.3.3. *A philosophically valid curriculum*

Hodson (1988) makes a significant contribution to science education in his call for a more “philosophically valid curriculum” in which he renders a curriculum inert if it does not consider the following kinds of questions: What is the role and status of scientific theory?; how is scientific knowledge validated and disseminated by the scientific community?; and, what are the methods of science? He argues that answers to these questions are not to be sorted out *prior* to engagement with students; rather, such questions ought to constitute the nature of dialogue about science *with* students. One particular illustration of such an approach would be to introduce students to the dynamic nature of the relationship between science practice (methods), scientific theory, and the physical world. Students ought to understand that an inquiry about the behaviour of light generates questions about how light travels through various media, the particle/wave theories of light and what information is important to learn. These questions drive knowledge construction about light while surfacing, in an explicit way, the processes of deciphering what constitutes the nature of light. A criticism leveled against a process-focused curriculum is that knowledge construction takes too long, renders the curriculum as overly emphasizing processes and forsakes understanding of accepted theories in science. Contrarily, such emphasis determines whether students develop theoretical understanding at all. A philosophically-valid curriculum supports an understanding that science depends on how well science processes are explicated with and experienced by students.

2.5.3.4. *Teachers’ epistemology and beliefs about science*

Clearly, the call to consider epistemology as a basis for curriculum development warrants an examination of teachers’ beliefs about NoS, teaching and learning. Tsai (2002), in a study with student teachers, found that prospective teachers’ beliefs about science, teaching and learning are often consistent. Student teachers holding a constructivist view of science are most likely to hold a constructivist belief about teaching and learning. Similarly, a traditional (textbook, intact knowledge) perception of science results in traditional teacher-centered instructional beliefs. Tsai refers to consistency in beliefs as “nested epistemologies” (Tsai, 2002) and contends that, while student teachers may hold particularly sophisticated views of science, they need to connect their views to beliefs about teaching and learning science during their teacher education programs.

Otherwise, there is often little transfer between teachers' epistemologies (views of science) and their pedagogical practices.

Yet, even while student teachers' beliefs and views of science may be sophisticated and authentic to its nature, the resulting classroom practice fails to reflect these views (Abd-El-Khalick & Lederman, 2000). The gap between epistemology and practice is enhanced by rote presentation of material in textbooks and curricular print resources. Textbooks, filled with content and facts, reflect science as lacking sophistication and are often chosen for their simplistic description of concepts. Another contributor to this concern is the apparent lack of attention given to history and philosophy of science in mandated curriculum. Interdisciplinary teaching is often regarded as an add on to curriculum rather than as a means for developing more robust scientific understanding. Numerous other administrative conditions limit teachers' abilities to reform curriculum, ranging from budgetary constraints to philosophical difference within departments and staffs. The challenges of fostering epistemologically informed practices are numerous but can be overcome if student teachers develop sophisticated views of science.

2.5.3.5. *Epistemologically literate teachers*

Combined, these dimensions of epistemological literacy—knowledge of the nature of a discipline, appropriate images of science, coherence between beliefs and instructional applications—promote the development of a teacher who not only understands her subject epistemologically but is able to communicate this to students by her actions, arrangement of curricula and selection of instructional models. Although the preceding sets of concerns regarding subject-area knowledge and pedagogical manifestations focus on science, parallels can be drawn between such concerns and the knowledge of any subject that teachers are preparing to teach. Indeed, learning the epistemology of art or mathematics and the pedagogical arrangements that explicate the nature of knowledge in these disciplines are as important to prospective teachers of art or math as they are science. Understanding any subject at an epistemic level means that student teachers appreciate the kinds of questions that drive its development (Matthews, 1994). Epistemological literacy also implies that student teachers learn methodologies that are pedagogically and philosophically appropriate to the nature of the subject, given the argument that methodologies such as inquiry present science in epistemologically and historically

coherent ways. One assumes that student teachers extend their knowledge base in two key ways: in the image of the content they form; and, the arrangement of activities, curriculum instruction and assessment that play out in the classroom to reveal and formulate this image with their students. Literacy is defined in science as understanding the nature of science, the enduring ideas of science and the relationship between science and society. Thus, student teachers develop subject specific literacy to understand the wider implications of knowledge in their subject area. This requires language, actions, and dispositions in order to communicate understanding and imagine in ways that students not only witness these processes and images but also experience them in the classroom. Hence, epistemological literacy, from a critical pedagogical perspective, characterizes teachers who are empowered in their knowledge and are able to coherently communicate a fuller understanding of the subject to their students. Arguably, one can imagine that for such literacy to be fostered in students, the teacher must be literate as well.

2.5.4. Culturally responsive pedagogy

2.5.4.1. *Cultural responsiveness*

In the face of globalization and the changing demographics of populations across the globe, teachers face the daunting task of first being prepared for and then capable of responding to cultural diversity in the classroom. The final discord in the literature deals with the perceived inadequacy of teacher education programs to cultivate culturally responsive practices in student teachers. Social justice, as an aim of teacher education, is concerned with preparing teachers who are not only responsive to social and cultural conditions in education but also:

Have a moral and ethical responsibility to teach all their pupils fairly and equitably. They...must be vigilant about the fairness and equity of the educational enterprise as a whole. This moral and ethical dimension of teaching makes issues of social justice legitimate terrain for exploration in the preparation of prospective teachers. (Velligas, 2007, p. 371).

Hence, cultural responsiveness is seen as an indication of a socially just teacher, one whose development should begin in teacher education.

An apparent failure of teacher education to prepare culturally responsive teachers is represented in the design, delivery and focus of educational programs. At first glance,

Velligas and Lucas (2002) report that teacher education programs typically consider infusing a culturally responsive focus as a “sprinkling of disparate bits of information about diversity into the established curriculum, resulting in the superficial treatment of multicultural issues” (p. 21). The underlying assumption is that, beyond a cursory consideration of diversity issues, promoting a vision of teaching and learning that responds effectively to a diverse society limits the more important goals of knowledge about teaching content and pedagogical methods. Limited attention is given in teacher education programs to acknowledge individuals as cultural beings whose cultural lives are revealed, celebrated and used as a basis for developing a vision as a teacher (Allen & Hermann-Wilmarth, 2004). Surprisingly, teacher education programs tend to overlook the biographical data of students, particularly cultural aspects, as affecting factors in learning to teach. Gay (2002) argues that prospective teachers hold strongly entrenched beliefs about cultural diversity and ethnic groups that are often based on popular culture and media images and are difficult to change. Specific cultural knowledge about ethnic groups and their contributions to society and academia is typically unavailable to students in teacher education and this further contributes to the limited and superficial knowledge held by prospective teachers about ethnic groups, cultural practices and beliefs. Sleeter (2001) attributes the failure to the inappropriate representation of cultural groups in the teacher education programs themselves. Mainstream values are perpetuated because the bulk of student teachers come from mainstream, Caucasian and upper socio-economic backgrounds with limited understanding of the authentic views of diverse cultural groups (Sleeter, 2001). In essence, the demographics of prospective teachers are unrepresentative of their potential students, significantly compromising their ability to understand learning patterns, communication methods and general epistemologies of various ethnic groups. Admission criteria for teacher education programs are ineffective in selecting candidates who are “dispositionally ready to receive the instruction and experiences presented to them” (Garmon, 2004, p 212). Candidates who are predisposed to openness about multicultural and diversity issues are more likely to benefit from cultural knowledge courses and intercultural experiences. Combined, these issues paint a picture of teacher education as a landscape bereft of the institutional and human resources to infuse and promote cultural responsiveness in the development of teachers.

The evidence is also grim on the issue of ethnic groups’ representation within teacher education programs. Generally, studies show the overwhelmingly low intake of

people of colour in teacher education programs in the U. S. (Sleeter, 2001; Cochran-Smith, 2004; Ladson-Billings, 2005). In Canada, the issue is most prevalent in terms of the under representation of First Nations student teachers in teacher education programs, as discussed at the Education Roundtable of Western Universities on Aboriginal Teacher Education in 2009. Although current local examples such as the Native Indian Teacher Education Program at the University of British Columbia and the Indigenous Peoples Teacher Education Module at Simon Fraser University specifically service First Nations student teachers, these programs are exceptions rather than norms. Under representation presents a twofold concern. First, prospective teachers are potentially unable to experience or engage with learners whose cultural practices and worldviews are uniquely different from their own. It is conceivable to complete an entire teacher education program and not have experienced how cultural differences can impact the learning and sense-making of different ethnic groups. The second concern is that dominant pedagogies are not questioned. As long as mainstream students encounter mainstream, status quo, and familiar pedagogy, there is no need to question either its effectiveness or importance because, arguably, student teachers experience little dissonance in such situations.

More recently, the Truth and Reconciliation Commission report and calls to action (TRC, 2015) present another set of considerations of teacher preparation. The first issue is centered on the lack of education about residential schooling in kindergarten to grade 12 or in undergraduate programs of student teachers who are entering teacher education—their knowledge base for understanding the calls to reform is limited. Secondly, there are challenges in “worldviews colliding” according to Littlebear (2000) of western perspectives shared by the majority of student teachers and the Indigenous worldviews of First Nations student teachers as well as students in their future classrooms. Without explicitly addressing the differences between these worldviews, student teachers are limited in their ability to teach inclusively and with broader understandings beyond their own knowledge systems. Thirdly, a major concern raised by the Truth and Reconciliation Commission report is that survivors and children of survivors of residential schooling have a long and troubled history of experience with education due to the atrocities of residential schooling. The need for skilled communication and connections with local First Nations is critical in terms of establishing healthier relationships between First Nations learners, their families, and schools. Finally, the issues raised by the report highlight the subtle yet

salient difference between teaching *about* the challenges facing First Nations learners and teaching *through* First Nations pedagogies to address those challenges. For example, in BC, the First Peoples Principles of Learning detail aspects of First Nations pedagogy as one that includes reflection, place consciousness, and identity-centered teaching. While the efforts of many teacher education programs may be to teach about these principles as a way to prepare more responsive student teachers, very few programs actually teach *using* these principles in a consistent manner. Thus, the issue of preparing teachers who are versed in multiple worldviews and pedagogies persists.

2.5.4.2. Curricular designs

One of the fundamental issues in teacher education curriculum is the manner in which a cultural focus is integrated. The literature reports several formats for cultural inclusion. At one end of the continuum, separate courses on multiculturalism in education are offered with discreet examples of how diversity is represented in the classroom. At the other end, programs have integrated and infused culturally-rich curriculum at the design level to maximize opportunities for students' engagement in intercultural experiences. Gay (2002) suggests some specific measures to construct and deliver a curriculum that appeals to multiple epistemologies and cultural diversity in the classroom, stating, "in addition to acquiring a knowledge base about ethnic and cultural diversity, teachers need to learn how to convert it into culturally responsive curriculum designs and instructional strategies" (Gay, 2002, p. 108). Gay identifies three forms of curriculum: formal, symbolic and societal. Formal curriculum consists of plans mandated by government policy and framed by standards. However, these can be potentially interpreted through a cultural lens by a culturally responsive teacher who deciphers the "multicultural strengths" within mandated curriculum and explicitly addresses controversial issues of racism and historical experiences rather than avoid them (Gay, 2002). The symbolic curriculum refers to symbols, images, statements and other artefacts displayed in classrooms. The selection of these symbols can be culturally equitable to represent diverse ethnic groups, while remaining sensitive to images which provoke thought from diverse perspectives. The societal curriculum is the knowledge about cultures and ethnic groups portrayed in society through popular culture and mass media. Culturally responsive teachers create instructional patterns to critically analyze how ethnic groups are stereotypically portrayed and how these misrepresentations can be counteracted through the education system. The overall effect is to understand how curriculum can be

treated as potentially rich with opportunity to experience a culturally-sensitive and responsive pedagogy. Clearly, much hinges on student teachers' personal motivations to be culturally responsive and to design culturally appropriate curricular designs.

As a final note, I consider the dispositional roots of cultural responsiveness in student teachers. Garmon's (2004) study indicates that openness, self-awareness/self-reflectivity and commitment to social justice are three dispositions that facilitate culturally responsive ways of teaching. However, programs not prescribing to a dispositional focus in teacher development may not foster such orientations. Further, there is much disagreement about the kinds of experiences that specifically stimulate the development and exercise of these dispositions. Cultural responsiveness, it would seem, is more than possessing cultural knowledge or cultural learning; it includes inherent human qualities.

2.5.5. Connecting concerns in teacher education with studying experiences

The preceding survey of literature serves several important functions. Learning about and acknowledging the myriad issues in the field of teacher education compel me to explore and investigate these concerns in my own experiences as a teacher educator. To *learn from experience* affords me the opportunity to better understand the nature of these tensions in my own teaching. The literature review also serves to generate questions about practice, programs, and teacher identity that inform the study undertaken. By reviewing these issues in teacher education, the context is set for the central problem of the thesis: What can be understood from examining my experiences to shed light on possibilities for addressing these issues and tensions in the field? What pedagogies can be considered as possibilities for coming to terms with discordance arising from these tensions in teacher education? This review of literature, categorized into concerns related to program and practicum, epistemological literacy, and culturally responsive teachers, gives reason to study experiences in teacher education in order to broaden understanding of discords both in the literature and in my practices as a teacher educator.

2.6. Part 2: Literature Informing the Study of My Experiences

The following section provides an overview of literature related to the theoretical underpinnings informing the study of my experiences: critically reflective lenses or *lenses of knowing* (Brookfield, 1995), the “authority of experience” (Munby & Russell, 1994) or *learning from experience*, and self-study in teacher education (Berry, 2007; Berry & Russell, 2016; Hamilton & Pinnegar, 1998). Rather than present a comprehensive review of literature in each of these areas, I focus on demonstrating their salience in relation to both the methods and outcomes of this thesis. As theoretical frameworks, they represent to the reader appropriate foundations for understanding the approaches taken and the epistemological commitments driving the examination of my experiences as a teacher educator.

2.6.1. Self-study in teacher education

The field of self-study in teacher education informs both the methodological processes and theoretical foundations for examining my experiences. While briefly introduced in Chapter 1 and further elaborated as a methodology in Chapter 3, I take this opportunity to focus on the ideological underpinnings of self-study as its own theoretical body of knowledge about teaching and, thus, attempt to connect the *what* to the *how* of this thesis. The following sections outline several relevant theoretical concepts within self-study research and practice.

2.6.1.1. Emergence of self-study

Much of the research relating to teacher education prior to the 1980s was driven by psychological perspectives and theories. The focus was largely on the cognitive dimensions of teaching and learning and causal impacts of external factors, such as the effect of reading programs, on the educational process. Reading the literature from that time, a majority of analyses was done in relation to the study of child development and in the sociological and biological aspects that might affect teaching practices. Little attention was placed on examining teachers’ knowledge of practice or on studying teacher education in order to understand development of practices in relation to teacher and student learning (Bullock, 2009; Pinnegar & Hamilton, 2009).

The growth of research interest in cognitive science and the shift towards focusing on ways teachers conceptualized their practice was supported by Schön's (1987) work on reflective practice. This marked a turning point in research on teaching and teacher education by promoting research on areas of teacher's professional practical knowledge and reflective practice as a basis for understanding teacher cognition. This shift was coupled with the admonition that teachers and teacher educators were becoming increasingly skeptical of third person representation of their practices even though Schön (1987) had provided both justification and means to rigorously examine teacher practice in teachers' own terms (Pinnegar & Hamilton, 2009). In the early nineties, as teachers and teacher educators began to focus inwards on learning from their own professional experiences, the Self-study of Teaching and Teacher Education Practices (S-STTEP) collective was established and recognized in the broader educational landscape as a legitimate form of research on teacher learning and teacher practices (Zeichner, 2005; Clarke & Erickson, 2004; Young, Erickson & Pinnegar, 2012). As Pinnegar and Hamilton (2009) state:

Research using this methodology allows researchers to document not only what they learn about teaching and teacher education from the study of them, but also the tacit and personal practical knowledge they possess that contributes to our knowledge and understanding of teaching. It allows teacher educators to more fully bring their scholarship into their teaching by providing a robust methodology for studying teaching and teacher education practice (p. 3).

Thus, in terms of research on teaching and teacher education, S-STTEP addressed a previous gap in understanding educational practice—the *self* as a both a site and means of studying practice.

2.6.1.2. *The spaces of self-study*

Pinnegar and Hamilton (2009) suggest the most apparent space in this genre of research is the "space between self and practice" (p. 14). In terms of self-study, the notion of spaces is fundamental to appreciating the distinctness of learning from the method of self-study than the kind of learning that emerges from quantitative studies. It is argued that particular knowledge arises from spaces generated by our lives as educators:

Self-study emerges between what we believe and how we act. Inquiries into our practices are influenced and informed by the space between the larger historical and institutional context and the personal local space of our classrooms; the space between our public and private lives; the space between public theory and private

action; the space between what we already know about our practice and the new reading we do to understand in a particular practice; the space between our data and our interpretation of it; and the space between what we know explicitly and what our action reveals we know implicitly. The space between ourselves and the others (present and absent) who are involved in our practice is the most fundamental space between that contributes to S-STTEP inquiries. (Pinnegar & Hamilton, 2009, p. 14).

The quality and texture of learning that emerges from such spaces is precisely what makes self-study rigorous. The focus on uniqueness of knowledge about teacher practice as opposed to the generalizability of knowledge against other knowledge about teacher practice is a fundamental component of self-study. By simply being aware of these spaces in the process of self-study, authenticity of the research and subsequent findings are, arguably, epistemologically more robust. In the absence of examining and paying attention to such spaces, research remains focused on the literal world of classrooms and contexts rather than in the hidden and internal spaces of living through experiences as teachers and teacher educators. Acknowledging spaces in S-STTEP also affords researchers the freedom to conceptualize, dream, consider, and delve into ideas that live between reality and imagination. This space of reflection, invention, and theorizing is where *particular* knowledge of teaching and teacher education resides and thus is critical to the practices of S-STTEP.

In S-STTEP, the relationship between theory, practice and experience is another important dimension in understanding how researchers come to know what they know. Pinnegar and Hamilton (2009) argue for an alternate conception of theory and practice that is distinct from the conceptions of theory applied to practice or theory informed by practice. The tool conception of practice, brought on by the same theory/practice chasm alluded to earlier, reinforces this idea that the two are separate but mutually dependent. They offer a model for understanding theory and practice as contextualized *within* experience. By applying theory to experience, practices are illuminated, as highlighted in the example of preparing doctors who construct the “diseased person in their head” through their experiences with patients (Pinnegar & Hamilton, 2009, p. 31). Conversely, as practice occurs within experience, theory is generated or altered. They state, “conceptions of practice remind us that it is in and through experience and our observations of it that both theory and practice get constructed” (Pinnegar & Hamilton, 2009, p. 30). Further, as theory and practice are revealed in more nuanced ways in

experience, experience gains authority in fostering the potential of researchers to develop deeper understandings of practice and robust theoretical knowledge.

Thus, the relationship between theory, practice and experience is pertinent to this thesis for several reasons. The importance of the authority of experience is highly relevant to the examination of my memories, and in turn, establishes memories as sites of theorizing and practice building. In addition, the co-dependence of these three concepts informs the methods of examining memories—reflecting on turning points and discordant experiences is integral to understanding practices in a more profound light and developing theory from the memories. The synergistic relationship also facilitates a *slow reflection* on the experiences such that the spaces alluded to earlier are revealed in the contemplative nature of writing about memories of practice, theory, and experience. Memories as a teacher educator consequently invite a different kind of meaning-making and unique sets of assertions (Pinnegar & Hamilton, 2009) associated with the more private, personal, and internal processes of coming to know experiences as a teacher educator. In the midst of grappling with theory, practice and experience, a relationship of mutual dependence emerges in the memory reflections which follow in Chapter 4, thus giving rise to the authentic meanings embedded in each memory. Whether in the midst of conducting self-study or in the contemplative spaces in the mind of the researcher, making-meaning and developing assertions are sought after outcomes of self-study research.

2.6.2. Critically reflective teachers

How does one come to view experience as an educator? In what ways are experiences informed? How are they made meaningful? Who and what are the influences shaping the memory of those experiences? Inquiry, taken up by teachers who are “critically reflective teachers” (Brookfield, 1995) is a habit that “confers a deeper benefit than that of procedural utility. It embeds not only our actions but also our sense of who we are as teachers in an examined reality” (Brookfield, 1995, p. 23). He asserts that this habit enables critically reflective teachers to “hunt assumptions” (Brookfield, 1995, p. 3) about teaching and learning by reflecting on the hidden power and hegemonies at play in experiences. How teachers arrange activities, assess students, and interact with colleagues are all based on understandings and prior conceptions of what is assumed to be effective teaching. Brookfield (1995) challenges teachers to think critically on their conceptions and not take for granted the implicit and deeper meanings embedded within

decisions made and actions taken by teachers. By critically reflecting on past experiences, teachers transform their autobiographical knowledge into powerful sources of strength for addressing problems and counteract innocence by recognizing that the “sincerity of their intentions does not guarantee the purity of their practice” (Brookfield, 1995, p.1). Teachers cannot assume that simply holding noble aims is sufficient to generate effective practice. Rather, through critical reflection, teachers uncover the hidden assumptions and elements of power at play in experiences and learn to question actions. Brookfield (1995) cites several examples of teachers who assume that a certain practice, such as visiting a small group to support their learning, may be viewed by students as surveillance. Without critical reflection, teachers may continue to operate from assumptions and a belief that their vision is beyond scrutiny. As Brookfield (1995) suggests, reflection that is *uncritical* perpetuates a “circle of innocence and blame” in teachers, whereby simplistic thinking persists and links student behaviour solely to teacher planning. Thus, critical reflection can guide teachers to model “passionate skepticism” in their pedagogical approaches to enliven classrooms, increase democratic trust with students, and enable the development of informed actions based on well-articulated rationales (Brookfield, 1995).

2.6.2.1. Lenses of knowing

In presenting this introduction to Brookfield’s (1995) conceptualization of critical reflection, two aspects apply specifically to my analyses: “hunting assumptions” and autobiographies as powerful sources for addressing problems. A persistent theme in this thesis is that student teachers’, colleagues’ and my own assumptions are surfaced through experiencing discordance. As one reads the memory reflections, it becomes evident the degree to which each memory is implicitly, and in some case explicitly, addressing assumptions about, for example, cultural diversity. The assumptions are revealed in the process of writing and articulating memory reflections through a critically reflective stance: my past experiences become problematized, leading me to clarify my beliefs and actions as a teacher educator. For example, in the memory of working with FTTs, my assumptions about prior knowledge gave rise to considerable dissonance in my understanding of how to design learning experiences within the courses I taught. Thus, *hunting assumptions* and seeking to confront them through critical reflection are integral to writing the memory reflections.

The second aspect of critical reflection, autobiographical stories, is somewhat obvious in that the memories are *my* experiences and reveal my story as a teacher educator. In sharing these memories, the aim is to move beyond the simplistic, reflective re-telling of events to deeper awareness of “paradigmatic assumptions and instinctive reasonings” (Brookfield, 1995, p. 12) of the memories I choose to share. In taking a critically reflective stance in order to develop the memory reflections, I was able to unearth hidden meanings—unique aspects of the experiences—and arrive at a deeper understanding of ideas that served to clarify pedagogical orientations embedded in my experiences.

While critical reflection provides a basis for understanding the stance taken in why one reflects as an educator, Brookfield’s critically reflective lenses provide the *how* of reflection. The lenses are: our autobiographies as learners and teachers; students’ eyes; colleagues’ experiences; and, theoretical literature. He states that “the best way to unearth these assumptions is to look at what we do from as many unfamiliar angles as possible...by standing outside ourselves and viewing what we do through four distinct lenses. Each of these illuminates a different part of our teaching” (Brookfield, 1995, p. 28). By considering autobiographies as teachers, we are able to “see ourselves from the other side of the mirror” (Brookfield, 1995, p. 29) and become acutely aware of seeing ourselves in new ways. Seeing ourselves through the eyes of students enables us to discern whether what we envision in our minds as teachers is what students take from our practice. For teachers, this illuminates power dynamics and reveals assumptions that are implicit in what we teach. Our colleagues teach us through critical conversations and reading situations from perspectives different than our own. Finally, we can reflect critically by turning to literature to reveal “multiple interpretations” of familiar occurrences and by naming our experiences in differing ways so as to illuminate general concepts from otherwise idiosyncratic events. The combination of these four lenses enables us to create a more comprehensive understanding of our experiences and critically reflect upon key aspects of our journeys as learners and teachers.

These four *lenses of knowing* are relevant because they are embedded, albeit differently, within each memory in Chapter 4. The memory reflections involve learning, through one or more of these lenses, the hidden assumptions and paradigmatic reasonings alluded to earlier. The autobiographical stories revealed at various points are felt at a “visceral, emotional level that is much deeper than that of reason” (Brookfield,

1995, p. 31). The foundations of my practices are laid in the networks of my autobiography; thus, choosing to write about my own experiences enables me to notice the otherwise hidden insights and meanings. In several cases, the memory reflections describe epiphanies arising through the eyes of my students and colleagues. Without their participation and involvement in these experiences, my learning would have been limited by my “interpretive filters” (Brookfield, 1995, p. 31). Utilizing the lenses of knowing increased my ability to have both a fuller view of my experiences and to see the experiences from others’ perspectives within the same context. For example, talking to colleagues enabled me to unravel “the shroud of silence in which [my] practice is wrapped” (Brookfield, 1995, p. 35) and thus open up differing versions of otherwise hidden experiences, leading to insights that were arguably more complex and adding integrity to my learning.

In summary, the *lenses of knowing* offered by Brookfield serve as an important theoretical framework informing this self-study. In moving through these experiences, I realize the value of engaging with my student teachers, having critical conversations with colleagues, and connecting my experiences to relevant literature. Collectively, the *lenses of knowing* enable me to illustrate key turning points and illuminate discordance as a persistent and recurring theme in my growth as a teacher educator.

2.6.3. Learning from experience—The “authority of experience”

Munby and Russell (1994) introduce the concept of “authority of experience” based on their research as teacher educators working with pre-service physics teachers. They state:

We introduce the term “the authority of experience” because of our concern that learning from experience is never mastered, during preservice programs, in a way that gives direct access to the nature of the authority of experience. If Schön is correct that there is a knowledge-in-action that cannot be fully expressed in propositions and that learning from experience has its own epistemology, then our concern is that learning from experience is never clearly contrasted with learning that can be expressed and conveyed in propositions. (Munby & Russell, 1994, p. 10).

In making this claim, the authors suggest that learning from experience requires two important dimensions: a different understanding of authority and epistemologically distinct learning. They argue that knowledge claims about teaching and learning rest on authority

of reason, such as reasons given to place students in mixed ability groupings or perform hands on activities. These knowledge claims arise from experiences of teacher educators whose authority of position can dictate what is conveyed to their students. The concern is that neither of these components of authority allow for the actual experience to be a source for learning. Rather, it is the re-telling of experiences in which knowledge-in-action (Schön, 1987) of teacher educators is transformed into propositions about teaching and learning. Instead, they call for authority of experience to precede authority of reason and authority of position for student teachers such that they can develop their own knowledge-in-action. In terms of the epistemology of learning from experience, Munby and Russell (1994) suggest that knowledge from experience is generated by *being in* the experience firsthand. Consequently, firsthand experience is a crucial component of learning from experience; yet, the issue of learning from experience persists when propositional knowledge or authority of position supersede what teachers or student teachers can learn from their practices in classrooms. They attribute this default mechanism to the absence of a clear understanding of the nature of learning from experience and thus set out to clarify the “authority of experience” and epistemological foundations of learning from experience.

While the bulk of their paper deals with authority of experience in teaching student teachers, several points have relevance to the study presented here. First, authority of experience means that what I *tell about* the experience is an approximation of the experience itself. Given that I am personally engaged in the experiences shared in Chapter 4, how I articulate them through memory reflections borders on propositional knowledge. However, there is a subtle and salient difference—the memory reflections result in conceptualizations which are neither propositional nor are they merely reasons for what occurred—rather, the “authority of experience” means that I can speak with and write about my experiences *with authority on* my experiences. They are presented as possible meanings rather than expressions of propositional knowledge. Second, the memories I share in the form of memory reflections demonstrate an appreciation for the unique epistemology of learning that is indicative of learning from experience. By recalling past events in my lived experiences as a teacher educator, and by applying semantic license to the ways in which I describe certain aspects of the memories, I demonstrate that the individual undergoing the experience is best able to name and ascribe meaning to it. The authority of experience means that I *have authority of* my experiences and thus,

can share them as authentic memories of my life as a teacher educator. Finally, the value of learning from experience is measured by the distinctly unique knowledge that arises from experience in comparison, for example, to learning that comes from reading a book or taking notes during a lecture. What I learned about the discordance and pedagogical orientations at play in my practices as a teacher educator through this study would not have been learned by reading alone. The combination of firsthand experience, reflecting, writing, reading, and engaging in critical conversations altered, influenced and enhanced my coming to terms in this study.

The “authority of experience” proposes a fundamental tenet—*experience educates us* in ways that are qualitatively different. The assertions about pedagogical orientations and the conceptualization of the cycle of discordance is generated from the multiple methods of inquiry into my experiences and the manner in which I analyzed understandings—the experiences taught me in ways that readings and lectures simply could not. This teaching occurred in two ways: one as a result of being engaged *in* the experiences, living through them in my daily practices as a teacher educator in relation to time, contexts and relationships; the other, from writing about them in the form of memory reflections as ‘after-thoughts’ of my experiences as a teacher educator. This multi-layered *learning from experience* was the unique epistemology of learning alluded to by Munby and Russell (1994). The epistemology of learning from experience and trusting the authority of experience rested in and ultimately required reflection upon that experience through the lenses of knowing described in the previous section.

2.7. Transitions

In summary, this chapter brings together the major components of the literature informing this study—literature related to the discords and concerns in teacher education as well as literature specifically informing this thesis in terms of foundations for the methodological avenues taken in this work. By “crossing thresholds” across distinct yet related literature in teacher education I aimed to: 1) establish current issues facing teacher education as reasons for examining my experiences; 2) provide theoretical frameworks for examining my practices and experiences as a teacher educator, and; 3) give language to the processes of inquiry driving this study. The following chapter shifts to the methods used in the study of my experiences.

Chapter 3.

Methods and Approaches

3.1. Foundations for Inquiry

Cresswell's (2003) framework for designing studies includes three elements for inquiry: alternative knowledge claims; strategies for inquiry; and, criteria for selecting methods. Cresswell (2003) states, "philosophically, researchers make claims about what is knowledge (ontology), how we know it (epistemology), what values go into it (axiology), how we write about it (rhetoric), and the processes for studying it (methodology)" (p. 6). In terms of knowledge claims, Cresswell (2003) distinguishes the four "schools of thought" as post-positivism, constructivism, advocacy/participatory, and pragmatism. The post-positivist position views knowledge as best developed via scientific method or scientific research based on the assumption that knowledge is "out there" and can be determined through systematic, empirical, quantitative means, and careful observation and measurement. Philosophically, this position is represented by objectively determining causes, effects and outcomes of problems to be studied. The key assumptions of post-positivist knowledge claims, according to Phillips and Barbules (2000) are: Knowledge is not equivalent to absolute truth and therefore warrants scrutiny; research is a process of making claims and then refining claims based on evidence; data, evidence and rational thinking shape the kind of knowledge that is generated; research aims to produce true statements in so far as they are proven through valid and reliable methods; and objectivity is essential in inquiry of any form. The post-positivist knowledge claim, based on these assumptions, typically results in quantitative studies, closed-ended questions, predetermined approaches and presents practices such as theory testing, hypothesis formulation, observations and measurement and statistics.

Advocacy/participatory knowledge claims suggest research is aimed to emancipate, address oppression and inequity, and speak to social justice concerns. Cresswell (2003) states:

Researchers believe that inquiry needs to be intertwined with politics and political agenda. Thus, the research should contain an action agenda for reform that may

change the lives participants, the institutions in which these individuals live and work, and the researcher's life. (p. 8).

The role of the researcher is more participatory and collaborative in that the methods themselves are intended to avoid further marginalization of the participants in the study. In this position, knowledge emerges from a synthesis of researcher and participant perspectives such that the voice of the participant represents the voice of the whole and serves to maximize potential for reform and improvement. Several theoretical stances are found within this type of knowledge claim, including feminist perspectives, critical theory, and racialized discourses. Such research ought to be conducted *with* others rather than on or to others, engaging participants in the inquiry process itself.

Pragmatic knowledge claims are derived from pragmatism and the need to develop solutions to problems by way of research. Pragmatic knowledge claims reflect the philosophic position that the problem that needs to be addressed is more important than the research method used to address it. Pragmatists choose mixed methods or whatever method works to solve a problem and integrate these methods at different times within the inquiry.

Cresswell (2003) identifies the fourth type of knowledge claim to be socially constructed. Knowledge from this perspective is a constructed set of meanings generated by the researcher's interactions with and participation in human activity and social contexts. Patterns of meanings or theories are developed inductively and are the result of socially negotiated knowledge, where research conducted from this perspective does not aim to imprint these meanings on others but to develop them through interaction and awareness of the social and cultural conditions that operate in individuals' lives. Researchers with this perspective position themselves within the research and declare the perspectives they bring to bear on the inquiry. This position towards knowledge yields meanings that are "varied and multiple, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas" (Cresswell, 2003, p. 8). Researchers generate meaning from data collected by participating, living and socializing within the context that is being studied while acknowledging that their own historical and cultural backgrounds act as lenses for interpreting how they and others make sense of data.

The four perspectives on knowledge clearly warrant different strategies and methods for philosophic coherence. Of the research methods (quantitative, qualitative and mixed methods), quantitative methods appear to be matched to post-positivist knowledge claims. Socially constructed and advocacy/participatory knowledge are suited to qualitative methods such as ethnographies, narrative inquiries, and self-study and pragmatic perspectives on knowledge appear to be supported by mixed methods research that allows for flexibility in the research process. Combined, knowledge claims, strategies for inquiry, and the methods used must all be considered when selecting an approach to research.

In considering Cresswell's (2003) framework of knowledge claims, inquiry strategies and methods, I chose to produce a qualitative study using self-study for several reasons. My decision was based on my view of knowledge as socially constructed and informed by the historical and cultural lenses I wear as the researcher. As I studied my memories, the retrospective process of thinking of past experiences and writing about them in the present lead me to construct (new) terms and understandings about the substructure of my practices as a teacher educator. The analyses resulted, as is discussed in later chapters, in a recurring experience of discordance encountered within each of the memories. While the discordance itself was engaging, more pertinent was learning about my practices as a teacher educator through the cycle of discordance.

Another important consideration for engaging in self-study is the assertion that my experiences as a teacher educator constitute "vulnerable scholarship" (Pinnegar and Hamilton, 2014, p.158). The inherent vulnerability of delving into experiences—often locked away in a memory of what seemed so personal, yet enacted in the public realm of classrooms and institutions—was the key to exposing these hidden memories to reveal deeper meanings buried within them. Experience as scholarship took on a new meaning when analysing these memories: experience became *my* teacher. Pinnegar and Hamilton (2014) suggest the "nested nature of experiences" leads to knowledge of practice that is qualitatively different than knowledge coming from triangulating data from separate yet related sources. The intimate connections between theory, practice, and experience come to the fore as hidden knowledge becomes visible and enters into the wider explanatory frameworks of knowledge about teaching, learning, and teacher education. The development of a methodology from these perspectives is deeply personal, yet

intended to be widely instructive for developing sophisticated understanding about practice, theory, and my transformations as a teacher educator.

In terms of the methodology of theoretical inquiry which includes questions and the development of a conceptual scheme, self-study is epistemologically aligned as it supports a questions-driven approach to address assumptions, understand conceptions and (re)construct ideas in consideration of new evidence. Given that this research did not include pre-determined factors to be tested through the development of particular measurement tools or participant generated data with quantitative or qualitative analysis, the method of inquiry used is arguably well suited for self-study.

By considering Cresswell's (2003) knowledge claims and selecting self-study, the deliberate focus on my lived experiences through my roles in program design and delivery became a valuable source of insights about teacher education curricula and programming. I found myself relying on constructing conceptual ideas and frameworks for designing activities and learning opportunities for my student teachers and for selecting instructional approaches to facilitate learning. A majority of my interest rested in understanding concepts such as reflection, inquiry, and professional identity by piecing together personal thoughts and ideas with knowledge from experiences of working with student teachers and colleague teacher educators—in essence, *constructing* a theoretical framework in a fluid, organic and often *ad hoc* manner for understanding teacher development. As introduced in the first chapter, the focus on discordant memories was established through early experiences and cultivated an attention to and propensity for making meaning of disruptive experiences as a teacher educator. In reviewing the literature, there was a notable gap in proposed models or frameworks for teacher education curricula. Teacher education literature was largely focused on identifying the aims of teacher education programs rather than on developing a strong theoretical foundation for curriculum or a pedagogy of teacher education to support transformations and growth in student teachers. In addition, the literature was scant in articulating conceptual and theoretical frameworks to inform the practices of teacher educators—not until self-study emerged as a significant field of research was there much focus on the practices of teacher educators. While the literature suggested teacher education programs that included particular content such as social justice in education or methods for teaching science would be sufficient in addressing the shortcomings discussed earlier, no clear mention was made of the conceptual frameworks undergirding the design and delivery of such courses.

In selecting methods, I considered other qualitative forms, such as narrative analyses, a method grounded in interpretive hermeneutics and phenomenology that involves the gathering of narratives—written, oral, visual—and focuses on the meanings that people ascribe to their experiences. Narrative analyses seek to provide "insight that (befits) the complexity of human lives" (Josselson, 2006, p. 4). While the narrative approach includes storytelling as both a process and source for gathering insights, it resists analysis within the story itself, instead focusing on the construction of the story and the social and cultural contexts shaping it. The narrative becomes both the process and the phenomena (Pinnegar & Hamilton, 2014).

While this description resonates in terms of the retrospective elements of narrative inquiry, it does not fully or accurately describe the manner in which I have retold and referenced these experiences in my life as an educator. They are not stories, per se, but rather recollections of experiences interpreted through a retrospective process of recalling events, reflecting on those events, and constructing meaning in the process of writing memory reflections about those events. Even naming them as memories changed the way these experiences were viewed. Similar to Bullock's (2014) "episodes" described as emotionally-laden, developmentally-situated, accurate, and authentic, these memories also shared the qualities of dissonant and discordant. I was provoked by the unease and disconnect I experienced as a teacher educator to write reflectively and reflexively about the experiences in order to come to terms with what I learned. More than episodic, in this characterization, memories became the sites of discordance where I sought to reconnect with my heart as a teacher. Furthermore, basing this study on unearthing and delving into my past memories revealed valuable learning about my practices as a teacher educator.

Another form of qualitative study that could be considered as applicable to this study is that of autoethnography. It is a methodological approach that includes an:

Autobiographical genre of writing and research that displays multiple layers of consciousness, connecting the personal to the cultural. Back and forth, autoethnographers gaze, first through an ethnographic wide-angle lens, focusing outward on social and cultural aspects of the personal experience; then they look inward, exposing a vulnerable self that is moved by and may move through, refract and resist cultural interpretations (Ellis and Bochner, 2000, p. 739).

Autoethnography combines characteristics of *autobiography* and *ethnography*. When researchers engage in autoethnography, they retrospectively and selectively write about

epiphanies that are part of, or are made possible by, being part of a culture and/or by possessing a particular cultural identity. In the case of this study, the cultures refer to educational settings both in the K-12 and post-secondary institutions in which I worked, and cultural identity refers to how I was identified or how I identified myself within those contexts. However, in addition to telling about experiences, autoethnographers are often required by social science publishing conventions to analyze these experiences; otherwise, they are merely telling stories (Allen, & Hermann-Wilmarth, 2004). The process of looking back on my memories as an educator, integrating meaning making and analysis into the written reflections, and generating concepts from these memories could be described as the process of first looking inward then to the wide-angle, outward representation of knowledge. However, there are a few key aspects that differentiate my work from autoethnography. By remembering and selecting particular experiences in my life as a teacher educator, I subconsciously applied a kind of cultural interpretation in selecting what I chose to document as part of this study. I chose to focus on discordant memories that were particularly engaging and provocative for me instead of writing a complete story of my experiences. In terms of vulnerability, while it was implicit in my sharing of these memories, the memories themselves did not expose my “vulnerable self” (Ellis & Bochner, 2000) as an outcome of the writing. Rather, the memory reflections empowered me to give meaning and substance to what may have seemed, at first glance, the mundane daily life of an educator. Thus, while autoethnography fits well with the aim of examining my own experiences as a teacher educator, the study takes a slightly different trajectory by focusing on discordance in selecting and analyzing these memories. In doing so, rather than resist cultural interpretation, I sought to interpret my memories as ones that were both informed by and illustrated discordance as a recurring perspective.

Finally, in terms of selecting methods for this study and establishing a context for the need for conceptualizing the cycle of discordance, I consulted Zeichner’s (2005) call for further research in areas of teacher education in which he reviewed over 400 teacher education research studies and compiled a list of recommendations that guided the choices made in terms of method, theoretical frameworks, and context of this thesis. The following recommendations were documented in the review:

1. Clear and consistent definition of terms;
2. Full description of data collection and analysis methods and the context in which research is conducted;

3. Research situated in relation to relevant theoretical frameworks;
4. Development of more programs of research;
5. More attention to the impact of teacher education on teacher learning and teacher practices;
6. Research that connects teacher education to student learning;
7. Total portfolio of studies that includes multi-disciplinary and multi-methodological approaches to studying the complexities of teacher education;
8. Development of better measures of teacher knowledge and performance;
9. Research that examines teacher preparation in different subjects in addition to mathematics and science and takes the subject into account when examining the effects of teacher education components and programs;
10. More systematic analysis of clearly identifiable alternatives in teacher education using matching controls or random trials as separate studies or in conjunction with in-depth case studies;
11. More in-depth multi-institutional case studies of teacher education programs and their components. (Zeichner, 2005, p. 740).

This self-study attempts to respond to several of these recommendations. Research calling for more relevant theoretical frameworks is directly related to this study as I attempt to articulate pedagogical orientations that support the conceptualization of a cycle of discordance. The theoretical nature of the findings as assertions further suggests this study seeks to respond to this recommendation. In addition, the in-depth analysis of a series of discordant memories directly responds to recommendations 5 and 11. By exploring memories of my experiences as a teacher educator in a variety of programs through the *lenses of knowing*, I critically reflected on the inner workings or components of the structure of curriculum, programs and practices of teacher education. The nuances of teacher identity, teacher development, and programmatic tensions were illuminated through the memory reflections, further responding to the need to understand the impacts of curriculum experiences on my and on my colleagues' and student teachers' learning. The methodological justification and purpose for this inquiry were grounded in an attempt to respond to these recommendations.

On a final note, Cresswell (2003) recommends that there be a “match between problem and approach” (p. 21). For example, to test a theory, he suggests a quantitative approach is best to account for variables in experimental design. In this thesis, qualitative methods are best matched to the nature of self-study where theorizing and assertions are presented as possible outcomes rather than measurable findings. The methods of studying memories of my lived experiences as a teacher educator, analysing them through the memory reflections, and proposing conceptualizations in final chapters match the central problem: What can be learned from events in my life history as a teacher educator which contribute to a conceptualization of teacher learning?

Given these considerations, the following sections address the methods informing the development of this thesis: singular case study, theoretical inquiry and self-study. I describe each in detail and demonstrate how they are enacted and ultimately connected to the study of my practices as a teacher educator.

3.2. Singular Case Study

At the outset, as a study of my lived experiences as a teacher educator, this thesis does not strictly adhere to the traditions of case study research, such as committing to hypothetical or generalizable claims. While I drew on case study methodology to help articulate memories, case study research generally includes both qualitative and quantitative processes (Denzin & Lincoln, 2000; Stake, 2005). The application of quantitative research methods can be utilized to examine, for example, achievement levels of students using a particular learning approach in mathematics. The qualitative approach involves in-depth examination to develop knowledge regarding the overall components of a program, classroom, or situation. Denzin and Lincoln (2000) suggest terms such as fieldwork are used as synonymous with case study to account for the broad range of forms of case study. In selecting singular case study, the purpose is to learn deeply about the case rather than to focus on generalizing beyond the case (Stake, 2005). Outcomes of a singular case study may not be generalizable to *all* teacher education programs but can apply broadly to the field of teacher education.

Stake (2005) offers a stance of *particularity* as a lens to examine a single case to reveal nuanced aspects of each case. Each memory in this study is viewed as a singular case as I chose to remain focused on one case or memory rather than a set of cases to

be compared (Stake, 2005). The case method allows me to explore my practices as a teacher educator through 'slow' reflection on and attention to deeper meanings of the experiences in each memory. As singular case study aims to identify forms, concepts and content indigenous to a particular case, not in relation to another, *unique* knowledge is generated in each case.

Studying memories relied on two aspects of singular case studies: experiential knowledge and the examination of a singular case in the absence of comparison. My experiential knowledge grew through the lenses of knowing in connection with my roles as a teacher educator in a variety of teacher preparation programs. Experiential knowledge, according to Stake and Trumbull (1982), gives rise to naturalistic generalizations: a set of enduring meanings which come from recurring encounters of personal and vicarious experience. Further, "good case study research follows disciplined practices of analysis and triangulation to tease out what deserves to be called experiential knowledge from what is opinion and preference" (Stake, 2005, p. 455). The memories achieve this status of experiential knowledge by the mere fact that they are not opinions on what transpired; rather, they are accounts of my time with student teachers and colleagues and are presented as evidential data towards the conceptualization of dissonance and discordance that permeated my practices as a teacher educator.

A second component of singular case study is the attention to studying the case itself rather than in comparison to other such cases. I analyzed each memory and sought to deepen my understanding of the experiences as ones filled with hidden meanings and insights about my practices as a teacher educator. Lincoln and Guba (2000) reiterate comparing cases in effect obscures learning deeply about a single case. The aim was not to compare each memory in order to learn more about subsequent memory experiences; instead, it was to extrapolate from concepts embedded within each memory that could inform the field of teacher education more broadly.

3.3. Theoretical Inquiry

Given each memory was considered as a singular case, I turned to methods of curriculum inquiry to analyse each memory. Short (1991) suggests curriculum inquiry includes forms of aesthetic, narrative, scientific, phenomenological, and evaluative inquiry and is based on three simple principles: the method requires developing salient questions,

engaging in inquiry, and constructing knowledge from this inquiry. In order to better understand the significance of my memories, I chose to develop several questions to inquire into my experiences: What memories stayed alive in my work? What occurred in the memories or experiences? How would I describe the discordance emerging from the memory? What learning did I take away from these memory reflections? These questions allowed me to examine my memories by creating a context where insights emerged in the “space between the researcher and the researched” (Hamilton & Pinnegar, 1998). In reference to the second principle of engaging in inquiry, I responded to the questions by describing and analyzing each memory in the form of a *memory reflection*, focusing on journals, written accounts, emails, reports, and recollections of conversations with colleagues and student teachers to bring clarity to the events within the memory. For example, when analyzing the memory of “Metaphors and Missteps—Transforming Teacher Identity”, I described the activity that precipitated a shift in my thinking about how one re-invents an identity as a teacher given a new set of regulatory requirements. In terms of the third component, I deconstructed and analysed the memories by attending to the questions and writing *memory reflections* in order to develop knowledge from my experiences.

The development of conceptual knowledge was facilitated by choosing a form of curriculum inquiry referred to as theoretical inquiry. Theoretical inquiry is a form of research that involves “creating and critiquing conceptual schemes by which the essential nature and structure of the phenomena can be better understood” (Grove & Short, 1991, p. 211). Through this analysis, I developed “a language system or a conceptual scheme by which I [could] think and talk about the entity” (Grove & Short, 1991, p. 213). Based on the third principle, this inquiry led me to articulate and put forward a set of concepts as knowledge of practice that emerged from these memories.

In terms of the self-study, the point of constructing theoretical understanding from practice and from *living through* and *learning from* experience is salient. Theoretical inquiry allowed me to develop concepts and language to articulate the “educational theory [that] lives in the practices of teachers and teacher educators” (Pinnegar & Hamilton, 2009, p. 4). This meant my experiences were not only revealing conceptual knowledge about teaching and learning, the experiences themselves were inherently theory-laden. Studying my memories fostered a growing understanding about theories and concepts deeply embedded, and in some cases only evident through reflection, within my practices

as a teacher educator. Pairing theoretical inquiry with self-study added both complexity and complementarity to the process of theorizing pedagogical orientations that grew out of my memories as a teacher educator.

Theoretical inquiry must adhere to four guidelines in order for the process to count as inquiry. The scope and boundary of the curricular phenomena, or memories as in this thesis must be limited yet complex. A coherent argument must be made for labeling concepts within this form of inquiry, such as the identification of reflective dissonance as a feature of my practice. The conceptual scheme resulting from theoretical inquiry must have some value and usefulness in curriculum design and program delivery. The assertions in the form of pedagogical orientations and the conceptual framework of a cycle of discordance are offered as schemes for consideration in the broader discussions about teacher education. Finally, concepts that develop from theoretical inquiry must be open to critique—limitations of these concepts and areas for further research are suggested in final sections. Collectively, these guidelines serve to strengthen the argument for engaging in theoretical inquiry as appropriate when examining my experiences as a teacher educator.

The combined approaches of considering each memory as a single case and examining them through the guidelines of theoretical inquiry serve several important functions: the reader learns about the in-depth analysis of each memory through the first-hand experience of my own reflections and writing about the memory; and, the reader is shown how constitutive and structural components are woven together to form a complex yet identifiable set of relationships to describe the memory. As derivatives of qualitative research, the methods employed support the development and presentation of a set of conceptual ideas that inform the day-to-day tensions and challenges of my practices across several teacher education programs.

3.4. Self-study

While theoretical inquiry and singular case study are suggested as methodological approaches, I situate them within the broader umbrella of the self-study of my practices as a teacher educator or S-STTEP (Hamilton & Pinnegar, 1998). The definition of self-study research is “a methodology for studying professional practice settings and identify its most salient characteristics as self-initiated and focused, improvement-aimed,

interactive and uses multiple, mainly qualitative, methods with a validation process based in trustworthiness” (LaBoskey, 2004, p. 817). Self-study is committed to and primarily concerned with *what is* rather than epistemological questions about sources, structures and justification of knowledge (MacKinnon & Bullock, 2016). The memories are the *what was* of my practices as a teacher educator brought into the present through reflective analysis. Pinnegar and Hamilton (2009) suggest that spaces between practice and practitioner, activity and theorizing, data and application, explicit knowledge and implicit knowing, belief and action, and institutional contexts and the personal landscapes of the classroom create the self-study and in turn, transform inquiry as a process into constructions of knowledge and understanding. Beyond the narrow gaze into structures, pedagogical practices, assessment approaches, and skill development which presupposes the use of quantitative methods, Pinnegar and Hamilton (2009) suggest, “when so many researchers are seeing teacher education small...seeing large [and] focusing on the particular shift of understandings of teaching and teacher education as we explore learning from our experiences” (p. 24) is perhaps more valuable. This is precisely the purpose of the study undertaken in this thesis. The shifts of understanding are implicit in the discordance within each memory and are brought to the fore as knowledge of teaching and teacher education. Learning from experience, consequently, gives rise to these shifts and promotes the articulation of concepts associated with pedagogical orientations at play within the memoirs.

Another component of self-study relevant to this work is “intimate scholarship” (Hamilton, 1995). As a reflexive process, self-study “enables researchers to position their research in the ontological space between self and other, where examination of what we know about teaching and being a teacher educator is most profitable for the larger research conversation on teaching and teacher education” (Pinnegar & Hamilton, 2014, p. 156). In writing the memory reflections and occupying the retrospective space of remembering “turning point” (Bullock, 2014) events and experiences, I examine what I intuitively understand to be examples of transformative teaching and learning. The intimacy of this kind of research gives rise to the particularities and nuances of my experiences as a teacher educator that might otherwise be masked by the application of other forms of research. The results of this intimate scholarship are concepts that could be useful to the larger discourses about teacher education and teaching about teaching.

Berry and Loughran (2005) remind us that self-study is an intentional and systematic inquiry into practice and is capable of surfacing complexity, intricacy, and tacit understandings of teacher education and teacher practice. This notion resonates with the processes of theoretical inquiry (as inquiry into practice) and singular case study (complexity and intricacy in terms of particularity) through the lens of studying experiences towards the building of understanding (as in the development of concepts) about teacher education and teacher educators' practices.

Samaras (2002) defines the roots of self-study as teacher inquiry, reflection and action research. Each of these forms of learning was influenced by the trends in teacher education at the time. Teacher inquiry grew on a vision of practice as problematic and thus required teachers and teacher educators to engage in systematic research of questioning their practices. At the time, Cochrane-Smith and Lytle's (1999) work on *inquiry-as-stance* added strength to the movement that positioned teachers as researchers and located research in the realm of teacher practice, teacher learning, and student learning. At around the same time, and under the premises of practice as problematic, teachers were actively reflecting on practice in order to learn and grow as professionals, a stance strongly influenced by the work of Schön (1987) who viewed teachers as reflective practitioners. Finally, with the rising interest in action research and subsequent focus on improvement oriented educational research, the aims of problematizing practice were to improve teacher practice and student learning. While these roots continue to inform self-study as a research methodology, built on reflection and inquiry in order to make learning public, the focus on *self* in self-study is necessary in distinguishing it from more pure forms of reflection, teacher inquiry and action research (Samaras, 2002).

As a retrospective self-study (Frambaugh-Kritzer, 2012), this work is in the spirit of Loughran, Hamilton, LaBoskey, and Russell's (2004) assertion that self-study must go beyond the telling of stories as a "pleasurable act" (p. 234). Self-study needs to be a systematic and rigorous analysis of narratives by probing the contexts, relationships, and ideas hidden within each story. Each memory reflection, thus, attempts to demonstrate this rigor by delving through the various layers of the experience and illuminating these understandings as insights gained from the process of analyzing the memories in these ways.

Another facet of self-study is the use of metaphoric language to illustrate the understandings emerging from these memory experiences. In many cases, the metaphors are symbolically represented in the naming of the memory reflections. For example, the metaphor of a house represents teacher identity development as similar to reframing and renovating a house in new contexts and under different regulations. The use of metaphor is documented in a number of self-studies (Batchelor & Sandor, 2017; MacKinnon & Bullock, 2016; LaBoskey, 2004) as a way to extend learning about experiences.

In considering these aspects in situating this thesis as a self-study, I found it helpful to turn to LaBoskey's (2004) characteristics of research design: self-initiated and focused that allows for "reframed thinking in practice and the transformation of practice"; improvement aimed by generating "embodied knowledge" by the researcher and public knowledge to benefit others; interactive such that multiple texts such as emails, journals, conversations with colleagues, and professional literature; multiple qualitative methods such as those included in this study; and, exemplar based validation whereby researchers make visible their "data, methods for transforming data into findings, and the linkages between data, findings, and interpretations" (p. 100, p. 2004). I attempted to have my process reflect these characteristics, but generally, I focused on three of these for this study: the exploration of my memories as a teacher educator was self-initiated and attended to particular experiences which resonated for me in terms of discordance and provocation; I sought to retrospectively study and analyze my memories as a means to better understand my practices as a teacher educator not only for my own growth and improvement, but for others in the form of knowledge of practice that might inform other teacher educators; and, I utilized multiple approaches of theoretical inquiry, singular case study, and retrospective self-study in order to strengthen the examination of my experiences and enhance the value of the outcomes of this study.

In enacting a self-study methodology, I remain cognizant of the reasons for the process itself, namely the value placed on experience to guide learning about self and the practices under study. Employing methods of self-study, such as identifying questions and interpreting data rests on one's "authority as a person who has experience in a particular arena of action" (Pinnegar & Hamilton, 2009, p. 56). Thus, as I consider these epistemological commitments in self-study research, I am encouraged to share my

memories as ones that demonstrate my authority in relation to the experiences and my propensity to learn from them.

3.5. Conducting the Inquiry

The methods outlined above were predicated on a systematic and rigorous process that involved two phases in the process of self-study: identifying focus and defining the study (Pinnegar & Hamilton, 2014). In the first phase, I identified the focus through the elements of provocation, where my interests were provoked by “nudging my ontological stance” (Pinnegar & Hamilton, p. 157, 2014). I paused and considered what I knew and what was worth investigating by exploring ideas, sources, and knowledge about teacher education and refined my focus by surveying literature. These three elements lead me to: study my experiences and practices as a teacher educator; attend to discordance and dissonance as provocative and engaging, and; consider theoretical concepts to analyse the memories, while cognizant that memories were inherently theory-laden. The data not only included sources such as emails, course outlines, and journal entries, but also my readings at the time and contemplation of my practices as teacher educator.

In terms of the practical work of self-study, I turned to Pinnegar and Hamilton’s “Framework-for-Analysis” (2009) to bring together the three methodological approaches presented in this chapter. The study was organized using the following framework: a) purpose—I aimed to explore my experiences as a teacher educator to understand the nature of my own learning and transformation of my practices by valuing the authority of my experiences; b) definition of self-study—I chose to define self-study as a reflective, constructivist, collaborative, in situ inquiry into my memories as a teacher educator; c) definition of self-study methodology—this work is a retrospective self-study which draws on key turning points in my practices and utilizes memory reflections and authority of experience to bring evidence of discordance to the fore in my practices over a period of time; d) rigorous research practice—I collected data from my experiences with colleagues, students and through reflection from memory, emails, reflective journals, and papers; e) explicit evidence—I presented and represented the evidence in the form of memory reflections which surfaced conceptualized knowledge and illustrated discordance as a recurring theme by the manner in which they were written and by what was learned from analysing them; f) authority of experience—as the study of my experiences was the main

focus, I took the position of both researcher and the researched thus strengthening the trustworthiness of the findings; g) story of self—the early chapters establish the context of discordance in my personal and professional life and situate me as a teacher educator who is disposed to theorizing; h) situate in larger literature—I draw on several lines of thinking and the literature surrounding the concerns facing teacher education in order to establish the bases for undertaking a systematic study of my experiences; and, i) questions raised in/by study—I posed questions throughout the study in terms of purpose and methods (Pinnegar & Hamilton, 2009, p. 42). This “Framework-for-Analysis” was used as a guideline, interpreted and adapted to support the progression of the thesis.

3.5.1. Selecting memories

Prior to describing the processes I undertook, it is important to say a few words here about the evidence of this study, namely my memories as a teacher educator. In selecting this term to describe these experiences, I considered Kosnik’s (2001) “critical incidents” as terms she used to describe her experiences in the chronology of developing an inquiry-based teacher education program. The process described by Kosnik (2001) references the use of a three-column chart in selecting, describing and analysing critical incidents in her journey. I considered using the term “narratives” which MacKinnon and Bullock (2016) use to illustrate their metaphor of “playing in tune” in relation to professional learning. There was the possibility of the term “vignettes” which Frambaugh-Kritzer (2012) uses to describe her innovations with technology integration through the metaphor of “old wine in new bottles” (p. 110). I also considered the term “aha-moments” used by Eberhardt and Heinz (2017) to describe critical experiences. However, in naming the evidence in this study as *memory reflections*, I freed myself from the need to chronologically represent my experiences, to present memories in a solely narrative, story-telling form, and to share vignettes as episodic stages of implementing changes to a program or course. Choosing memories as the term for the evidence meant I was drawing on particular experiences which remained at the forefront in my thoughts regardless of whether they were integral to a particular program or aim. Thus, memory reflections could include components of all these yet remain distinct by focusing on reflection and conceptualizing within the writing of the memory—a synchronous *folding over* of method and analysis.

As Pinnegar and Hamilton (2009) suggest, several aspects must be considered in deciding what to collect as evidence in self-study: it can be simple but not simplistic in order to make more authentic and robust claims about what is understood; it is important to consult with others about what is chosen for evidence; the process of deciding what evidence to collect can shape the question and study undertaken; and, the evidence collected must actually inform the question(s) being explored. From this set of criteria, it seemed appropriate to draw on memories which were connected to the questions driving this study. I also chose to describe the memory in the form of a *memory reflection* in an attempt to demonstrate the reflexive nature of remembering and re-telling—the memories stayed alive in my thoughts *because* I reflected on them. In selecting these memories, I thought back to critical moments that caused me to question what I knew, were disruptive to my thinking, and created powerful visual images in my mind. The memories were not merely cognitive, they were visceral as well. Each memory evoked an emotional response in me, both while I was in the experience and long after as I wrote the memory reflection. Indeed, the memory reflections capture some of this emotion, whether it was a sense of unease, dissonance, joy, or a combination that accompanied my memory of the experience. The memories were also selected by looking back on textual materials such as emails, reflective journals, papers, notes, comments on assignments, and visual images such as photographs. As I read through the raw data, the tools of this self-study took shape—I began to reflect on them and talk about them with colleagues and students. I wrote papers about some of these ideas and began to present at conferences. In doing so, I attended to the conditions for rigor in self-study by checking alternative viewpoints, collaborating with colleagues and making thinking “public” (LaBoskey, 2004).

Once I had decided on the memories I wanted to document, I began to write the memory reflections. By occupying the space between the researcher and the research, I made meanings of and learned from the memory of experiences as a teacher educator. The clarity and ease with which this process of meaning making occurred surprised me at first; I soon realized that learning for me was to trust the *experience to be my teacher*. As I looked back on my life experiences, writing about the memories in reflective and reflexive ways generated profound insights for me as a teacher educator. I began to appreciate the generative power of writing about memories as the self-study.

In summary, the process of selecting and generating data for this study can be articulated chronologically. Despite the fact that the memories shared in this thesis span

a decade or more of experiences, the actual study was located within the span of approximately one year. In that time, I began by developing the central question prompted by the “kaleidoscope of notions” informing teacher education: What could I learn from my experiences to shed light on teacher education and offer further clarity to the conceptual frameworks driving teacher education curriculum? I had come to a time in my professional life when I felt somewhat disingenuous having to borrow pedagogical models and theoretical/conceptual frameworks from other educational domains of knowledge, such as “thirdspace” (Bhabha, 1994), to examine and come to terms with my experiences as a teacher educator. Thus, with this motivation, I began a six month process of thinking back to experiences, sifting through emails that I had stored in my sent folder and filing through reports and conference papers in electronic and hard copies written during the span of a decade of practice as a teacher educator. I had also kept journals with notes from meetings, conferences and of personal reflections as I engaged in some of the experiences of which I wrote. These documents were relatively easily found as, ironically, I had stored them *because* they were the ones that were particularly engaging and resonant to my growth over time. Approximately three months into gathering documents, I began writing the memory reflections. With the first memory reflection, I read some of the notes from the journal I was given the first day as a teacher educator. These notes prompted me to write about the salmon story. The process of writing memory reflections could be described as the ebb and flow between the first level of data in the form of these documents and the second in the form of the written memory reflections. After writing the first memory reflection, I reviewed LaBoskey’s (2004) criteria and Pinnegar and Hamilton’s (2009) framework-for-inquiry-and-analysis as a check against the criteria for rigorous self-study research. I attempted to match the process to the process of data gathering and analysis. For subsequent memory reflections, I continued to employ this pattern of writing and checking against these sets of criteria. The process of writing all the memory reflections took approximately three months and was perhaps one of the most enjoyable aspects of this self-study. As I reviewed the memory reflections, re-reading them several times and editing as part of this process, I generated pedagogical orientations from the memory reflections by identifying key phrases and turning point events. I had already begun to articulate orientations and knowledge of practice as part of the writing of the memory reflections. For example, circular pedagogy was named within the memory reflection of my first day as a teacher educator. The additional layer of notes as I re-read the memory reflections were documented electronically as point form statements and

phrases of what I noticed and what seemed to be recurring themes in the writing. Through this process, I began to develop ideas central to the pedagogical orientations articulated in the final chapter.

3.5.2. Writing memory reflections

Interestingly, I wrote about the place memories first perhaps because places have factored so significantly in my life as a first generation immigrant. I also gravitated towards memories of my childhood in writing the memory reflections. There was a joyful sentiment as I wrote about growing up as a child and visiting places that held meaning for me. At one level, I believe that the choice was intentional in so far as it released the tension of academic writing about someone else's work. I felt the comfort of writing autobiographically and I sense this led me to write with more ease about the place-based experiences. I followed this initial memory reflection with the memory of "Metaphors and Missteps", as the places reminded me of the many places around the world from which the FTTs, with whom I worked, had come to be re-certified as teachers in Canada. The reflection titled "Circle and Circular Pedagogy" was inspired by the memory of my first day on campus as I transitioned from teacher to teacher educator in my role as a faculty associate. The remaining memory reflections came in chronological order as the experiences with the prospective science teachers was most recent in my practices as a teacher educator.

3.5.3. Generating a conceptual scheme

In reference to pedagogical orientations and a cycle of discordance, I mined my memory reflections in a way that is more indicative of this being a self-study than a narrative analysis. Rather than looking back on text, this mining was generated *in situ* and *simultaneously* as I wrote the memory reflections. The use of particular language such as "circular pedagogy" came out of the discordance I felt at a visceral level at the time of the memory and in writing reflectively about it in this thesis. As the recurring cycle of discordance became clearer as a heuristic through which to comprehend my practices, it was also being *utilized* as it developed. This *folding over* of method and outcomes was in itself a discordant, yet enriching experience as a self-study researcher—it kept me suspended in the spaces of reflection and interpretation. As I applied the methods of self-study and sought to make meaning from my reflections on particular memories, the cycle

of discordance was taking shape through the generative process of writing about the events that occurred. From this *folding over*, the theory, practice and experience (Pinnegar & Hamilton, 2009) merged to facilitate the generation of concepts that were grounded in the memories—the memories became bases for knowledge of practice. As these concepts began to take form, my understanding of the memories and my practices as at teacher educator grew clearer as well.

In the final stages of the method utilized in this study, I turned from the tools of self-study to application of the theoretical inquiry described earlier. As I wove together literature with and within the memory reflections, the concepts at play in my mind crystallized into a conceptual scheme as per the process of theoretical inquiry. The inquiry into my experiences led me to develop a language system to describe knowledge of practice—in the form of pedagogical orientations and a cycle of discordance as elaborated in Chapter 5.

3.5.4. A point about rigor and trustworthiness

In self-study, rigor is best achieved in the following ways: the interrogation of multiple data sources including curriculum documents, emails, notes from conversations, and personal reflective journals (LaBoskey, 2004); the analysis of data sources, consideration of alternative viewpoints, collaboration with colleagues; and, by making thinking “public” and thus open to scrutiny (Elliot-Johns, 2011). These approaches are demonstrated throughout the memory reflections in Chapter 4 by including sources such as emails, journals, memories of conversations with colleagues, activities with students and epiphanies I had about my practices over the years as a teacher educator. Thus, by situating memories as developed through the *lenses of knowing*, it became evident that multiple data sources and alternative viewpoints informed the development of this study. Further, in terms of rigor, Pinnegar and Hamilton (2015) remind us that self-study researchers improve how they ask questions (demonstrated through the use of theoretical inquiry), how they frame their work within the wider research conversations that demonstrate significance (relating my study to the discords in the literature) and connect research to other self-study researchers in order to illuminate their work (utilizing Berry’s (2007) research to discuss assertions for action and understanding in the final chapter of this thesis).

The term trustworthiness, used in place of validity in self-study research, hinges on LaBoskey's (2004) assertion that "self-study researchers are concerned with both enhanced understanding of teacher education in general and the immediate improvement of our practice" (p. 818, 2004). In this study, as the researcher whose own memories constituted the evidence, the "authority of my experience" essentially became the validator of the memories as authentic accounts of my practices as a teacher educator. While terms such as validity and reliability concern researchers, these terms are steeped in a tradition that seeks objectivist and position-centered knowledge—the kind of knowledge that is counter to the subjective and experience-centered view taken by self-study researchers. Thus, the use of such terms negates the potential for self-study to occupy the messy or "inconclusive" space of research in the in-between of past, present and future, and the overlap of identity and integrity (Pinnegar & Hamilton, 2009). Self-study is concerned with precisely those spaces where "identity and integrity coalesce" (Pinnegar & Hamilton, p. 35, 2009) and where context and experiences are studied simultaneously. What does this mean for validity and trustworthiness in relation to self-study? These ontological commitments to the authority of experience suggest that: a) the experiences I've presented as evidence are authentic and require sustained attention to and honouring of the spaces that emerge in the contexts of my experiences; and b) I have to trust the reader to deem my memories and the rigor with which I have analysed them as sufficient and therefore regard my work as trustworthy. Thus, the degree to which the reader trusts my authority as the researcher, given the vulnerability of this kind of research, determines to a large extent the value of this work (Berry & Russell, 2016). As a final note, I contend that when the source of knowledge is my experience, the point of rigor may be moot—in particular as the initial impetus for the study was to reconnect with my heart as a teacher and identify the kinds of practices that kept me fully alive and engaged as a teacher educator. It seems that rigor, while important in terms of research methodologies, holds less significance and arguably seems misplaced when considering the study of lived experiences.

3.6. Transitions

Where to from here? While the methodological underpinnings presented in this chapter offer support for the self-study frameworks for inquiry and analysis guiding this study, they also open up probable avenues for considering the conceptualization of

pedagogical orientations and the cycle of discordance. Indeed, the very nature of self-study, theoretical inquiry, and singular case study as a hybrid methodology is predicated on an ontological stance of theorizing, constructing, and inventing knowledge based on experiences and from practice. The point is that the methods are tools for exploring memories, yet they also serve as pathways by setting in motion the processes needed to arrive at conceptualizations and knowledge of practice as outcomes or assertions about what is learned. As Pinnegar and Hamilton (2009) remind us, “we believe that we live in a particular place and time and we act within certain and specific contexts with people who exist in that same space” (p. 51). In applying these methods, I invite the reader to learn about the memories of my experiences as a teacher educator.

Chapter 4.

Discordant Experiences in a Teacher Educator's Journey

4.1. Key Turning Points

The methods of examining print documents, email correspondences, and reflections on conversations and experiences from my work as a teacher educator for more than a decade were critical in surfacing discordant memories. The following data are a collection of my memories in various contexts and across a variety of programs. The focus of these memory reflections is on a nuanced understanding of practices that led to my own discordance on a number of different levels. The following questions narrowed my focus on specific experiences and were particularly informative to the process of clarifying the concepts in later sections: What experiences stayed alive in my memories? What dissonance and discordance did these memories involve? What did I learn about practice from these memories? Why did these memories stand out to me in the first place? As I considered these questions, several common features of the memories came into view. The memories stayed with me in ways that seeped into other aspects of my work, in some cases, leading to further scholarship and research activities. For example, one of the research studies in which I participated later in my tenure as a faculty member was focused on exploring communities of practice in a cohort of prospective science teachers, a direct result of learning from the “science teacher to science teacher educator” memory reflection in Chapter 4. The memories represented epiphanies about my identity as a teacher educator and about experiences with student teachers and colleagues that led to me to question my practices. The memories also stood out as particularly informative, provocative, engaging, and at times, unsettling and disconcerting, yet all held great importance as they informed my growth and transformations as a teacher educator. Finally, the memories provoked dissonance where prior knowledge was brought into question based on some unexpected or counter-intuitive situations. Often, these discrepant experiences led to new ways of conceiving my practices with student teachers.

The following memories are intentionally in non-chronological order. The reader may want to see a pattern or continuum emerging from these memories or conclude that

learning that resulted from one memory was deemed as a new set of prior conceptions to be disrupted by subsequent experiences. The reader might also suggest that all of the experiences occurred in the same context, lending credence to the belief that it was the context that created the discordant nature of the experience. Thus, it is important to clarify that the memories are single cases, not for comparison, not arranged in chronological order, and not chosen because they neatly fit into some kind of predetermined pattern. Indeed, the trustworthiness of this study lies in declaring that these memories emerged from careful and sustained attention to the lenses of knowing and the consideration of research methods as outlined in Chapter 3.

4.2. Memory Reflection: Metaphors and Missteps— Transforming Teacher Identity

I had been hired to teach in the Professional Qualification Program (PQP), a program designed for FTTs who were seeking re-certification as Canadian teachers. It was during a gathering of newly hired and experienced faculty associates in August 2008 when I sat down with my teaching partner to discuss plans for teaching a new module of FTTs in September. Other faculty associates and I had spent the previous day discussing ideas about teacher education program goals and the best practices and curricular arrangements that might support the development of student teachers enrolled in programs at this university. My knowledge and conceptions for the preparation of teachers were derived from my previous experiences of teaching and supervising student teachers in a one-year post-degree bachelor of education program. Through this work, I had come to believe that student teachers needed to unlearn their images of kindergarten to grade 12 classrooms and teaching in general in order to re-learn what it meant to become a teacher. This belief was informed by literature regarding pre-conceptions held by student teachers as well as my experiences of engaging student teachers in deconstructing what they perceived to know about teaching, learning and schooling. I trusted this approach as a best practice for educating future teachers.

From this vantage came the assumption that my colleague and I could use similar language of transforming one's identity from student to teacher and develop activities as in past years, such as a "journeys" assignment in which student teachers traced their experiences from kindergarten to grade 12. We attempted to model effective teaching strategies with the mindset that everything was new to the FTTs. However, there were

two key turning points in the process of working with this group of teachers. We realized approximately two weeks into the program that we had neglected to learn about the systems in which they had previously taught as teachers and as such, had failed to acknowledge their practices in their previous countries of residence and had assumed they were able to understand the complexities of the educational structures into which they were seeking certification. We proceeded to ask them to teach us—faculty associates and other students in the program—about their educational structures using methods from their previous contexts. During these micro-teaching sessions, we suddenly saw these teachers—their manners, language, stance, verbal and non-verbal communication, and the confidence that came from speaking about their own pedagogical and educational ‘homes’. In the midst of this activity, we realized that our students still saw themselves as teachers who had held membership in professional communities, yet they simply were not being recognized by, nor did they recognize the system into which they were about to enter. The second turning point came when we asked the FTTs to visit schools in which they would be placed for practicum. Their experiences could best be described as a set of discrepant events in their understanding of school, teaching, learning, and education as a whole. Many of their prior conceptions about the roles of students and teachers were challenged by what they encountered in their visits to BC schools. What they noticed was profound and insightful. From their initial visits to schools, the FTTs were surprised at the seemingly relaxed learning environments, the freedom of students to move about schools, and the diversities within the school population. They were particularly intrigued at how this environment was created and sustained without “total chaos” ensuing in the schools. They were perplexed at the level of freedom afforded to students and teachers and the “informal” nature of communication between students and teachers.

The dissonance experienced by the FTTs led me to re-think the ways in which I had envisioned my teaching approaches with this group. I had not fully considered the pre-conceived and complex framework for what teaching, learning, and schooling looked like for the FTTs that needed deliberate analysis and sustained contemplation. I thought about Pinar’s notion of curriculum as *currere*, where learning is experienced as an “intense engagement with daily life, not an ironic detachment from it” (Pinar, 2004) and my thoughts turned to creating opportunities to engage the FTTs in their lives as teachers in prior contexts to examine how they envisioned their teacher identities. My concerns were

rooted in Pinar's concept of "an autobiographical curriculum" where the subjects were not the *what* of education, but the *who*. From this perspective, and through further discussions with my colleague, we developed the idea of using a metaphor to explore this further. At the same time, I had been reading the work of Ted Aoki (1993) who wrote of "living in the hyphen" and "curriculum-as-plan" vs. "curriculum-as-lived". These ideas began to shape my thinking about the curriculum we were designing to prepare the FTTs for BC certification and I soon realized a curriculum of "student-to-teacher transformation" for FTTs who were *teachers* was short-sighted. I had missed this very critical piece in my vision as a teacher educator—the subjects, in this case, had to be the people who undergo them (Pinar, 2004); to leave their teacher "selves" as unexplored was to deny their lived experience as FTTs. The question arose as to how we might engage them in their lives as teachers in a way that might illuminate their own transformations as teachers to the new and vastly different professional contexts of schools in BC. As we thought about how one constructs an identity as a teacher, we began to play with the metaphor of a house to think about their teacher identity. I was drawn to a phrase my father, an architect, made at his retirement: "As an architect and planner, I consider the spaces in a building ought to reflect the people who use the building. We don't just build structures, we build livelihoods". Thus, the metaphor of a house to represent teacher identity emerged as a way into the livelihoods and lived experiences of the FTTs. In adopting this metaphor, we took it one step further to talk about the idea of "renovating the house called teacher" to enter into discussions about the changes and adjustments the FTTs were about to make in order to once again find their place or home as teachers in BC.

These insights propelled me to reflect on my assumptions and analyse the PQP curriculum I had co-planned with my colleague at the time. As we reworked our activities and began to elaborate our ideas around the metaphor of renovation as a mechanism for navigating changes in practice, the idea emerged to have the FTTs draw their "teacher house" as a way to capture and represent the components of their identities, roles, and responsibilities as teachers in their prior countries of residence. The following sections describe the activity of "renovating the teacher house" and the kind of discordance that arose from our collective engagement with this metaphor.

At the time of developing the metaphor as a curriculum organizer, I began to write out the process of the renovating identity metaphor from my own perspective. How might I make sense of this metaphor if I was an FTT? What connections could I make? The

narrative style allowed me to hear my students' voices in me—to bring to the fore the challenges of renovating their house called teacher. I wrote this narrative as we moved through the activity, over a period of a few weeks, each time, coming to a new place of understanding about my own role and the challenges and successes faced by the FTTs. I then chose to integrate literature that I was also reading at the time. They represented the continuous connections I made between theoretical ideas I was reading and discussing in my graduate courses and the day-to-day practical applications and experiences of my work as a teacher educator. The relationships of theory, practice and experience (Pinnegar & Hamilton, 2009) were once again illuminated through this exchange between literature, reflection, and meaning-making which solidified the importance of reflection as a foundation for my own learning. While I considered myself to be a reflective individual as memories featured strongly in my own sense-making, this kind of sustained analysis of readings and discussions in course work through the prisms of my daily teaching made these memories come to life in ways I had not anticipated nor could have planned—once again, *experience became my teacher*. The readings interwoven throughout this memory reflection represented my attention to literature somewhat on the periphery of discourses about teacher development rather than literature in the field of teacher education specifically. In doing so, the uniqueness of these experiences of teaching FTTs was reinforced. By turning to literature in the areas of culture and identity theory as an example, I found a way to hinge my experiences and the metaphor of renovating a house called teacher on what seemed more appropriate conceptual foundations. Finally, in this memory reflection, the interplay between the metaphor and the theoretical concepts of *currere*, cultural change, and hybridity gave rise to one of the key findings of this self-study—the emergence of “third spaces” in the pedagogical orientation put forward in the final chapters of this thesis. Writing this memory reflection in the way that I did, in first person and channelling the experiences I observed of FTTs in my program with their voices echoing in my mind, confirmed that discordance permeated my experiences; but, more importantly, making sense of that discordance could result in generating knowledge about teacher education.

I remember the feeling I had as a teacher back home...it was my life, it was me. I see so much that is different here. What are teachers doing? Why are their classrooms so different than the ones I remember back home? Can I be a teacher again? Can this ever be me again? (Author Journal, 2008)

Rogoff (2003) states, “human development is a cultural process”. As a premise for considering teacher development within the program for FTTs, it offers a way of envisioning teacher development as a process influenced by the social, political, geographical, linguistic, historical, and temporal conditions that surround individuals in any context. If this is the case, it becomes necessary for FTTs to be engaged in a curriculum that illuminates all of these dimensions in the context of schools and classrooms, and furthermore, to know how to grow and change practices in light of these dimensions. What are the cultural dimensions of schools that challenge the FTTs to consider changing their practices and ‘renovating’ their identities as teachers?

I have come to Canada hoping but having left a familiar place; a house called teacher. I loved my house called teacher because I remember its familiar sounds, comforting sights and the feeling of being content, at peace, at home. This house provided me with so many fond memories, so much comfort that I wonder how I might find that house, no, home again. I know that the parameters for the teacher house in Canada and BC are different than from where I came, but I need to know what my teacher house is and what it will need to look like in this new place. I need to bring my teacher house to the standards of ‘Canadian teacher’. It is daunting. Will I ever really have a home as a teacher again? And what does a Canadian teacher house look like? (Author Journal, 2008)

4.2.1. *Currere* and autobiographical curriculum

Pinar (2004) provides us with a conceptualization of curriculum as a discourse and engagement of self with other and self with content. He describes it as a private and public discourse, a “complicated conversation” (Pinar, 2004, p. 37) that embodies biographies, histories and futures. He calls for curriculum and education as a whole to be a complicated conversation such that our engagement with school knowledge aims to “complicate our understanding of ourselves and the society in which we live” (Pinar, 2004, p. 186). This characterization of curriculum by Pinar hinges on an important assumption. The curriculum, conceived this way, calls for centering “school subjects in the autobiographical histories and reflections of those who undergo them” (Pinar, 2004, p. 38) situating autobiographies as integral to constructing curriculum; *currere* becomes a way to conceptualize curriculum from a first person point of view where education should be a study of self *in* education. From this vantage, Pinar (2004) renders subject knowledge

inert until knowledge becomes attached to and hinged upon the biographies of individuals engaged in creating that knowledge.

Suddenly, some of these rooms being described by those around me, upon further reflection, became more familiar to me and I realize my teacher rooms might just need a little new furniture or a fresh coat of paint. Just some minor renovations. Maybe other rooms will need major changes. Still other rooms are missing entirely and I need to learn what is missing and how to add it into my existing teacher house. I have begun to understand what the rooms of Canada teacher house can look like, which rooms I might need and which rooms just need a little updating. Or, I may decide to do major renovations or even tear down the house to the foundation. (Author Journal, 2008)

4.2.2. Cultural change

Rogoff (2003) views of cultural change as shifted from pure assimilation to more current notions of blending and hybridization of cultures. In human development terms, it creates a framework to consider how global movement between and within communities can be supported. Rogoff (2003) states that:

Cultural practices of different communities are not necessarily mutually exclusive. In thinking about change, we do not have to limit ourselves to considering shifting from one cultural system to another in an either/or fashion. Rather than assuming that other communities' ways are simply either noble or barbaric, it is to everyone's benefit to learn from each other's ways. Connections among different cultural patterns can serve as impetus for creative development of new cultural ways. (p. 354).

This is an appropriate summary of how cultural change, viewed in this way, builds upon individual and collective biographies and histories. Rogoff's (2003) call for connecting cultural patterns between cultures gives rise to two important ideas: (1) that culture is characterized by a set of unique patterns that can be observed in diverse forms across different cultures, a stance similar to the culture of teaching; and (2) that cultural change is an ongoing process of mediation between various cultural patterns which leads to the emergence of new patterns and, conceivably, new cultures.

The renovation is difficult, it takes time, it is messy, and I am having trouble accessing certain rooms because I'm just not sure what is still worth keeping. Yet, I will persevere and stay focused because I am so close to having my teacher home again.

Sometimes the architectural consultants want me to change the way I want to create the room, but I am getting better at convincing them that certain rooms require certain treatments or features in order for me to feel comfortable with it. The renovation, near completion is a collection of spaces, places, smells, sounds, sights, and energies that remind me of home. It is starting to look quite beautiful as a teacher house. (Author Journal, 2008)

As our work with the FTTS continued through the metaphor activity, I witnessed the emotional and sometimes painful process as they transitioned to unfamiliar and new roles as part of their teacher identities in relation to recertification as BC teachers. There was anger and some even felt humiliated that they *had* to change their “teacher rooms”. As I reflected daily on teaching the FTTs, I too struggled with the challenges of creating meaningful and productive teaching experiences. It was then I turned to readings on hybridity and cultural negotiation to temper the dissonance I was experiencing and develop language to understand what I was experiencing in my teaching.

The concept of hybridity, largely attributed to the work of Bhabha (1994), can be seen as a conceptual model for living with difference. For Bhabha (1994), hybridity “becomes the interpretive mode for dealing with the juxtaposition of space, and the combination of time lag out of which is constructed a sense of being that constantly oscillates between the axioms of the foreign and the familiar” (Bhabha, 1994). Notably, the foreign and familiar are merely cultural reference points that define but do not limit the past and future spaces in which identities are negotiated. The translation of identity requires interpretation and often results in representations of original identities. Bhabha (1994) suggests that hybridity as a translation from familiar to foreign gives rise to “stubborn chunks” that do not merge or assimilate into another; rather they emerge from liminal and interstitial spaces of translation and transgression becoming points of departure for the development of new cultural identities. Hence, the hybrid identity is tentative yet legitimate, existing in constant negotiation within the boundaries and peripheries of cultural interfaces.

Despite varied conceptualizations offered by cultural theorists, space can be seen as a theoretical construct for understanding and validating intersecting, conflicting and contradictory discourses and experiences. Bhabha (1994) introduces the concept of *third space* and suggests third space is a unique entity existing in the meeting of boundaries of

cultures and discourses. Hybridity is the form of liminal in-between-ness that opens up the “enunciative, interrogative” third space which questions established cultural and historical identities (Bhabha, 1994). His work, rooted in post-colonial discourses, suggests hybridity as antidote to the hegemony of colonizer and colonized and, in doing so, affords the emergence of new and legitimate identities. In questioning identity, the third space allows for the development of the contested and oppositional identity that exists in the meeting of cultures (Bhabha, 1994).

In reading these passages, I found a pathway into discussions with the FTTs about not having to give up or adopt new identities. Bhabha (1994) and other cultural theorists gave me language to navigate these renovations of identity *with* the FTTs and support them to develop a third identity as a legitimate interface between who they were as FTTs and who they were becoming as BC certified teachers. Within the frameworks of hybridity and third space, we were able to talk about the rooms of the renovated teacher house as being neither fully transformed or static. Rather, their journey of transformation from FTT to BC certified teachers now included the valid and legitimate enunciation of a hybrid identity as a teacher. The renovation metaphor, extended and allowed them to keep some rooms in flux, in constant states of renewal such that the house called teacher was in an ongoing and constant lived process of change.

I have built a beautiful Canadian teacher house. The renovation, while difficult, time consuming and exhausting at times has made me an expert on my home. I know its nooks and crannies, the places it is a bit weak, where the foundations are strong, what's holding up the roof and what is deeply connected to the ground. I know why I put things in certain ways, where further renovations are needed and what the best parts of my home are for now. I have remade my 'house called teacher' and I am a teacher once again with a unique home that contains parts of the earlier home, and parts I could never have imagined would be in my teacher home. I am a teacher, renovated and renewed, in an identity that is a synergistic relationship of past, present and future. The renovations will continue, no doubt, and I realize that the saying, "home is where the heart is", is even more appropriate now that I have found my heart as a teacher again. (Author Journal, 2008).

The program for FTTs represented a possible *third space* in which neither past nor future teacher identities existed. In practical terms, it was a liminal interface between

previous teaching and BC teaching practices where discourses emerged that served to make the hybrid teacher identity distinct—containing simultaneously oppositional and common traits of past identities and future ones. The FTTs came to see how the cultural context of BC classrooms called upon new aspects of their identities, such as the nature of pedagogical relationships in the context of student-centered instruction. While FTTs faced challenges, their newly renovated identities as BC certified teachers emerged by the end of the one-year program.

As previously mentioned, Rogoff (2003) implies that culture is a function of the social interactions of a community. This is evident in the ways in which the FTTs generated a kind of “hybrid” culture from the cultural dissonance they encountered as they entered BC classrooms. By connecting previous and new experiences, the FTTs re-created their teaching practice and, in effect, selected the best of both worlds. Perhaps, it is the connections among these teachers, their dialogues about educational cultures and their negotiation of teaching cultures that was the impetus for developing a new culture of teaching. It lends credence to the notion that culture is an organic system that emerges from living, interacting, experiencing and changing. It is possible to suggest that FTTs were not switching cultures, but that they were effectively creating new hybrid cultures as they negotiated their lives as BC classroom teachers.

As I reflected on these ideas, I came to gain a deeper appreciation for the value of the renovation metaphor as a way give language to transforming teacher identity and practices. Writing this piece from the first person, I attempted to capture the discordance—brought on by losing heart—in my journal and in writing the first person narrative, I realized the metaphor applied to me as well. My own curriculum plans had to be shifted and restructured in order to reflect the needs of my students who were clearly lost in the labyrinth of an unfamiliar home—my planned curriculum of student to teacher. What the FTTs experienced was a curriculum form predicated on assumptions about what they needed in order to be prepared as BC teachers. I once again drew on Aoki’s (1993) notion of teaching as the “indwelling between two curriculum worlds”: curriculum-as-plan and curriculum-as-lived. My own journey of transformation as a teacher educator working with FTTs was initially bereft of this important perspective. I allowed the planned curriculum to supersede the curriculum of autobiography, hybridity, negotiation, and *currere*. The discordance arising from these experiences taught me to value curriculum-as-lived in

ways that I had neither experienced myself nor understood well enough to enact. There was much more to learn.

4.3. Memory Reflection: Place-based Pedagogy, Placements, Place-meanings.

A large part of my work as a teacher educator required me to negotiate student teacher placements in schools for certifying practicums. The process of locating, securing, and mediating placements proved to be one of the most complex and challenging experiences of my work. These challenges were not from logistical and pragmatic considerations of finding placements in classrooms to meet requirements of the regulatory board which certifies teachers but from the nuanced and often unapparent relationships that took shape between the placement site and the individuals involved in it. While I began navigating placements from a more technical perspective—making sure the grade levels and content areas matched, that the school associate mentoring the TC was well informed about the process, and observations cycles were followed according the handbook for practicum mentoring—what I learned over the course of the experiences was deeper and more profound than the process initially seemed. In my placements journey, the following three memories were particularly informative to the discordance I experienced as I endeavoured to understand and learn about place, place-meaning, and place-based learning.

4.3.1. Recognizing the land/The land recognizing me

My attention to place started at a very young age in the rolling sagebrush hills of the interior city of Kamloops, BC. Throughout my years of growing from an elementary-aged child to a university-bound adult, followed by years of weekends and summers returning to visit parents and grandparents, I had always remembered my experiences through the prism of the places that defined this city as my home. I suppose this early place-consciousness was a result of road trips taken with my father, who was a city planner, through the back roads to ranches, farms, mines, and deserted homesteads that shaped the Thompson-Nicola river valley. I would listen to him describing the minutest of details, “like the back of a hand”, who owned the land, what it was being used for, why it was important to the region, and stories about the old time ranchers who lived in the outskirts of the city. I remember enjoying these weekend drives and would always ask to

tag along to see those hidden places through the vantage of my father's experiences. The details stayed with me: the sweet smell of sagebrush across the valley, layers of sedimentary rock formations from old riverbeds that shaped this valley, the meeting of the two rivers of North and South Thompson as the basis for the Shuswap meaning of the name Kamloops, the growth of ginseng farming in the region in the early 90's, the French named lakes of du Bois, la Hache, la Jeune, and la Roche revealing the earlier settlers in the region, the Kamloops Indian Band across the river with one of the first Band schools in BC, jade mining on the stops home from Vernon, frost heaves on the roads, and pioneer Sikhs whose names adorned street signs in the northern section of the city. I remembered, almost as though frozen in time, the images of the sand spit under the bridge where the rivers met, the swaying birch trees lining the river's edge where we hung rope swings and dared our friends, the weeping willow at the park down the street from which we would make 'willow braids', skipping rocks across any lake or river we visited, hiking through Mounts Peter and Paul and the Peterson creek trench waiting for rattlers to sound in warning, sifting through fossil beds in bachelor heights, snow camping at McQueen Lake, and the hot summers of swimming at Shuswap lake with big picnics and small rubber boats. These memories of place were profoundly iconic. They represented more than mere sites from my memories as a child; they were the symbols of how I *knew* places. While I recognized the land as my home whenever I returned, the memories made me think that the land *recognized me* in these ways. The places spoke to me as would a familiar friend whenever I returned home to Kamloops or visited for short trips with my own family.

4.3.2. Finding the familiar in the unfamiliar

Perhaps this early affinity for the sense and sensibilities of place can also be attributed to an event in my life when my father and I were lost while cross-country skiing near Lac la Jeune. I was 12 at the time, and my father had done some planning work with the owners of the resort. As a sign of gratitude for my father's assistance with the resort's expansion, we were invited for a day of cross-country skiing and dinner. Off we went at around noon for an anticipated three to four hour ski trip. The two of us realized something was wrong when we couldn't hear the sounds of the lodge or nearby snowmobilers on the lake's trails. We continued to ski, aware of the growing darkness; and then it became cold, quiet, and still. The stillness was deafening and I recall the feeling of numbness and

fatigue even as my father urged me to keep going. Then, as our luck changed, the moon shone through the night sky fuller than I'd seen before and lit the tracks below us. It was then, under the moonlit sky, my father decided the best thing to do would be to turn around and head back on the same trail from where we had set out earlier that day. In the depth of the fear of being lost, I vividly remember the search for familiarity. I looked at trees as though they might seem like a familiar place that I had visited before. I tried to smell the smoke from the large chimney at the lodge. I wondered, at every turn of the trail, if I had been there earlier that day. Were these the trees we had passed? Was this the rock we sat on for a break? What did the entrance to the trail say? These questions, swirling in my mind at the time, were attempts to find the *familiar in the unfamiliar* and to look for land that I recognized and that recognized me. As we backtracked our way, we eventually returned to the start of the trail and saw the smoke from the lodge in the distance. It had been twelve hours since we left and we later learned that they had been searching for us since dusk. Luckily, we were safe and otherwise uninjured and continued to do our day ski trips for years after this experience.

4.3.3. Place as my teacher

I share these insights and, in particular, the 'lost' experience to illustrate the profound impact of places on my understanding of learning from place, through place, and about place. Place pedagogy scholars such as Chalmers (2003) and Gruenewald (2003) give places dimensional qualities and suggest that identity is inextricably linked to place. They suggest that place is fundamentally pedagogical and we learn from places because they hold a different sense of time, they call on us to develop context-dependent skills, they require attention and care for sustainability, and they are "wayfinding" calling on us to "recognize the place and the other beings in those places" (Chalmers, 2003, p. 34). In such terms, *place becomes the teacher*. Time, memories, resonances, interconnections, relationships, and images become the curriculum of place—a curriculum which encapsulates the extraordinary meanings that places hold in one's life. Thus, from these indelible impressions of places in my early years, I formed a particular affinity and lens for the importance of place as a curriculum of possibilities in shaping one's identity.

4.3.4. Learning places

Over the course of a decade of work as a teacher educator, I participated in and coordinated the placement of students in schools and classrooms for practicums. In BC, students in teacher education programs participate in practicum experiences as part of their programs for certification. In the programs in which I worked, placements were also made internationally and, during my tenure coordinating programs in teacher education, I was tasked with overseeing an international module based in Dalian, China. I travelled to China with students and other teacher educators for a period of two weeks during their five week practicum. Student teachers were placed with local Chinese national teachers and several teachers hired from BC who taught the BC curriculum. The intention was to prepare graduates of this school in China for the opportunity to earn an equivalent diploma held by graduates of grade 12 in BC.

Adjacent to the school were teacher residences where the module housing and meeting rooms were located. Here, I would meet with student teachers and colleagues regularly over the span of the two weeks to debrief their placement experiences. Through the students' reflections and explanations, I came to a deeper understanding of the context into which these students were becoming teachers. Prior to arriving in China, my belief was that an international location for the practicum, half way around the world, would offer a qualitatively different cultural context and present an opportunity to critically examine teaching and learning by surfacing student teachers' prior assumptions and conceptions. For the mere fact that we were in another country, I held high hopes for the transformative potential of learning to become a teacher in the context of an international and possibly *unfamiliar* placement. I came to several revelations as students shared reflections and observations of their practicum experiences. The first was that, while we were so far from BC, the placement itself was largely with BC certified teachers hired from Canada to teach BC curriculum to students pre-oriented to expecting a western model of education. The parent community of this school had selected this school for their children's education based on the fact that students would learn BC curriculum and earn BC high school credentials. As student teachers who were placed here with the vision of a deep and rich intercultural experience, they were in essence learning to teach in ways that were bereft of the context and cultural influences of the local region of China in which the school was located. For me, this disconnect came to the fore when student teachers shared their experiences of learning to teach and their emerging identities as teachers with little to no

knowledge of the local language dialects, community events, home life, work life, social life of their students and their families, or the socio-political history embedded in the fabric of this northern region of China. It became evident to me as a teacher educator working with students in this international setting, that the *inter* was absent from the student teachers' experiences at this school. For student teachers, very few opportunities were available other than social outings to local restaurants and tourist sites to engage with local families and communities in ways that revealed more subtle and hidden aspects of lives and livelihoods of the people of Dalian, China. In the midst of these realizations, I came to question why we were there with these students. The meaning of the place in which they were conducting their practicum seemed unimportant and ineffective in the development of their identities as teachers. They didn't seem to know or need to know what this place meant to them or to their students as they taught a curriculum situated in a framework of a place halfway around the world. How could student teachers find meaning in this place when they were learning so little about it? How could they draw on place in their development as teachers? What place-meanings were being constructed by the student teachers of this city, so far from home? These were a few of the questions percolating in my mind at the time. In addition, and perhaps more troubling, the local context of cultural, linguistic, historic, political, and geographical dimensions of place of which I had been currently reading in Gruenewald (2003) were absent in the lesson planning and student assignments the student teachers were designing. As Noddings (2002) points out, it was a kind of "generic education for anywhere which soon became an education for nowhere" (in Gruenewald, 2003, p. 164). I wondered at that time if there was a way to inspire my student teachers to see *place as a teacher*—not only for them as future teachers but for their students as well. The task seemed daunting in the short two weeks I visited.

Another memory I draw on crystallized for me the duality of familiar and unfamiliar in the context of place-meanings. Even though I was feeling drained by the inner struggle of this "non-international, international" site for our program, a surprising and uplifting set of personal experiences began to take shape. In the early days of our arrival in Dalian and my visits to the school, I encountered what I later referred to in my journal as an "experience of universes colliding" (Author Journal, 2009). In the course of the first few days, I met three former students I had taught in high school who were now teachers at the two schools we visited. In addition, six former student teachers from a program I had

been teaching since 2002 and three former teachers and administrators from the school in which I did my practicum some 24 years prior were employed at this school in China. I also met two teachers who had worked with my mother in the Kamloops school district. Apart from the joy that I felt in the serendipity of these encounters, it surfaced for me yet another set of possibilities to consider in the context of understanding place-meanings: Time could stand still even when the place itself was in motion. The unfamiliar surroundings of this city in northern China, the sounds, smells, and sights, all became suddenly familiar as though I was transported into a place I had visited or lived in before. Through seeing people from my past with whom I held multiple connections, I experienced the overlapping of past and present, as though time had been folded back into itself. The place-meaning of being there at that time, in the context of those familiar faces, spoke to me in profound ways. Being so far away from home didn't preclude me from finding home in a place. Yet, by being recognized by people in a foreign context, I fell into pre-existing and pre-determined roles of student teacher, teacher, teacher educator, and friend in a land where the possibilities of who I could be and how the place could potentially shape me were lost in the familiarity of those connections. The patterns of relationships were like a net cast over my experiences and I struggled to be fully in place at a visceral, intuitive, and cognitive level and to surrender to the unfamiliar and familiar of what it had to offer.

I continued to explore my understandings of place through practicum placements in my role as a teacher educator. Years later, as a faculty member in another teacher education program in BC, I valued the experiences I had with place as informative to my understanding of how schools shape teachers and how, in turn, teachers shape schools and classrooms. Place and identity were inextricably connected in my mind and I began to consider the impact that school as a place has on the development of teacher identity in my students. At the time, many of the student teachers were second, third, and even fourth and fifth generation members of the communities in which they were to be placed for practicums not far from the university. How would they find the unfamiliar in the familiar of schools and communities where they were students and members themselves? How would they see beyond the surface and peel back the known memories of being schooled in classrooms where they were to be placed for practicum? What would my students need in order to look beyond the buildings and structures with new lenses and deeper questions? The deep-rooted connections, built over generations, that my students

brought with them were both strengths and potential hindrances to the gritty process of shifting identities from student to teacher. In realizing these challenges, I introduced several approaches into my teaching that gave rise to a kind of dissonance and discordance that proved deeply moving and ultimately transformational in how I viewed my students in relation to the place of schools and *their* place in school.

The following sections describe two experiences in relation to place: the impact of a community ethnography assignment; viewing the documentary *Schooling the World* (2010) and confronting misconceptions of help in relation to global education. The community ethnography involved examining components of the sociological, ideological, and geographical dimensions of place (Grunewald, 2004) to develop a more complete understanding of the porous boundaries between schools and communities. The *Schooling the World* documentary reinforced the problematic nature of a generic model of pedagogy and proposed the idea that schools become a reflection of the community and shape the community through the education of its members.

4.3.5. Community ethnographies

In one of my courses, student teachers engaged in an activity I had designed around Grunewald's dimensions of place (2003). The focus of the activity was to find the *unfamiliar in the familiar* with student teachers visiting school sites in the neighbourhoods where they may or may not have grown up. The idea was to have students visiting schools from the *outside-in* and to delay the inevitable myopia that comes from seeing schools as a collection of classrooms. In the activity, student teachers were placed in groups and were assigned schools randomly. Their task was to visit the school and take note of the geographical, sociological, and political perspectives by analysing the physical landforms around the school (geographical), the occurrence of municipal structures such as recreation centers and parks (sociological), and religious centers and private institutions such as shopping malls (political). Student teachers examined demographic data to learn about the needs of the community in terms of language, accessibility, housing and the implications of these for school programming. The salience of this activity came in the presence of the students in the spaces of that school community—they were encouraged to be conscious of the places around the school as prisms through which they would eventually view the students in these schools. Working from the *outside-in* became the focus of understanding the place of schools as part of an interconnected network of

dimensions of place—some hidden and some fully visible. What emerged from student teachers' presentations on their community ethnographies was a sense of *the porous boundaries* and *layers of learning* in schools. There was a growing awareness of the impact of the surroundings of the school, how well it was integrated within the community network of sociological, political, and geographic places that ultimately had implications for what happened *inside* the school. Student teachers found acknowledgement of Indigenous territory marked at the entrance to the school, or murals painted of the geographic features surrounding the school. *Outside-in* as a stance developed during this activity strengthened the focus on how to feel and sense a place by being fully present and seeing the school as one part of a whole network of a community. Student teachers began to understand that what happened inside schools was not only impacted by the surrounding dimensions of the school, the community places shaped the teaching and learning taking place within the school. The *layers of learning* extended this idea that the school both informed and was informed by the community around the school. By understanding the layers of the community through which students moved as they entered the school, it became clearer for the student teachers conducting this community ethnography, that students entering their classrooms were “layered” by their life experiences beyond the confines of the school. The student teachers began to understand the importance of considering these layers worn by their future students in how they would prepare lessons, activities, and designs for learning in their classrooms. In several of the community ethnography presentations, student teachers described student populations entering these schools as a microcosm of the communities in which they live; they reflected the layers of sociological, political and ideological realms of their lives such as their leisure activities and faith practices. Student teachers' awareness of the *layers of learning* was heightened through the community ethnography and contributed to their understanding of place as having a significant impact on where, how, and what learning occurred.

4.3.6. Schooling the world—A generic education for nowhere

In the context of examining the purposes and roles schooling serves in the broader landscape of education, I often have student teachers view the documentary *Schooling the World*. The film, set in Ladakh, India, puts into question what the moral obligations are of schooling and education and how western education has been interpreted and put

into practice in places around the world. At a deeper level, the documentary explores questions such as: What is education? Who it is serving? Why the western model of education is being promoted in non-western cultures and communities? How have these models of education impacted local communities, in particular Indigenous Peoples? The documentary takes up these questions in the context of portraying the experiences of children from regions of Ladakh, India who are sent to non-secular schools with a conventional model of curriculum delivery, formal assessments in English, and the integration of faith practices in education. The documentary follows a group of Ladakhi youth who find themselves displaced and un-rooted from their cultural, linguistic, and spiritual practices as they emerge from these schooling experiences and enter into the urban cultures of big city India. The documentary is overtly critical of the practice of applying a western model of education to places around the world and likens the ongoing practice of “schooling the world” to a form of colonization through education.

After viewing the documentary, I use strategies to facilitate reflection and analysis of the issues, such as walk-n-talk or fishbowl. To suggest that the ideas of this documentary are disruptive is an understatement. Student teachers entering a teacher education program bring with them a general belief of the good intentions and inherent value for education as a whole. It is often why they want to become teachers—they want to contribute to the narrative of education as a “good thing”. The documentary challenges this belief by positing the claim that education has become an enterprise, and the global movement to reproduce largely North American models of schools in places around the world, in this case in India, systematically serves to disconnect young people from their cultural, linguistic, and spiritual practices. In the scenes of young Ladakhi children reciting the Lord’s prayer and being punished for speaking mother tongue languages, one can draw parallels to current discourses of cultural genocide in the residential school eradication of culture, language, and identity of Aboriginal peoples in Canada.

Student teachers’ reactions vary significantly from cohort to cohort but a few notable commonalities emerge from my responses to their reflections. I think back to comments I wrote to student teachers in response to the *Schooling the World* reflection assignment in which they were asked, using prompts, to express the meanings they constructed about education after viewing the documentary. My responses highlighted three aspects of the dissonance that arose for me through reading my student teachers’ reflections: tunnel vision; help; and generic education.

4.3.6.1. Tunnel vision

“It can be challenging when our awareness doesn’t allow us to see beyond what we know” (Email Communication, 2013). As I responded to student teachers’ reflections on the documentary, it became apparent that they were struggling with the value they placed on education as a generally “good thing” and the critiques presented in the documentary. Somehow, in the context of negotiating the disruptions of seeing schools halfway around the world eradicating the language, culture, and identities of the young generations of Ladakhis, the positives of education contrasted with the detrimental impacts schooling had on the lives of families, communities, and cultures. Student teachers’ initial perspectives demonstrated uncritical and naïve assumptions about education, possibly fueled by their own relatively smooth experiences in schools. However, from their reflections, it was clear that a kind of *tunnel vision* led them to deeper re-examination of their beliefs about education and the purposes of schooling from the vantage of prospective teachers. While student teachers seemed to have limited perspectives on the impacts of western education with its agenda to prepare students for global economies at the expense of cultural identity, this discordance became apparent after viewing and reflecting on the film. As I poured over my responses to their reflections, I became aware of the assumptions about teaching and learning that were indicative of conventional notions of schooling—as promulgating a modern vision of society that educates children and families out of their own systems of learning that maintained cultural, linguistic, and familial traditions for survival for generations. As Wade Davis states in the film, by schooling the world from one perspective and model, it is as though we say “these Ladakhi people just need to get with the program and adopt our way of life and forget theirs” (Schooling the World, 2010).

4.3.6.2. Help

My memories of student teachers viewing this documentary include discussions about unpacking notions of helping children and communities around the world through education. For many of my student teachers, their own experiences with traveling to places as part of faith-based organizations were centered on the purpose to construct schools in mostly rural areas of developing countries. With these pre-existing experiences shaping their perspectives prior to viewing this documentary, *Schooling the World* presented students with the shadow side of help as another tool of colonialism. In several episodes of the documentary, well-meaning travellers and educators spoke of the need

for education to bring people into a modern way of thinking and equip them with the necessary skills and knowledge to compete in the global economy. The premise rested on the assumption that existing cultural practices, knowledge, and community living were inadequate in educating the Ladakhi people. One response I sent to a student stands out as particularly relevant to discussions of help:

I am deeply moved by your reflections about the way you see helping others after viewing the documentary. Your realization that helping communities by building schools, as was your experience prior to the program, did not fully acknowledge the profound impact of western education on non-western communities. Perhaps as you continue to navigate these experiences in the program from this disrupted lens, you may find many more assumptions challenged. This is all part of learning to become a teacher—it is crucial to ask critical questions about what we assume are the functions of schools, and the roles of education in broad terms, but also to examine at a very narrow and focused level the direct consequences that schooling and education have on students' identities, language, culture, and history. Who is education for? Who is left out? What is deemed valuable to know? These are just some of the questions we will continue examining in the weeks ahead. The ripples from your insights are worth exploring. (Email Communication, 2014).

The shifting perspective I acknowledged in the response indicated discordance in student teachers' reflections on confronting challenges to their tunnel vision perspectives on schooling.

4.3.6.3. *Generic education*

Examining the purpose of schooling through the lens of this documentary allowed me to engage in discussions about place-conscious education. I shared a passage from Gruenewald's (2003) writings about the place of schools to illustrate the complexity of factors affecting the interface of schools in communities. The following passage, in particular, references this idea: "The immediate challenge that place-conscious education poses to educators is requiring us to reflect on the consequences of a school-centric curriculum that ignores the pedagogical significance of experience with familiar and forgotten places outside schools" (Gruenewald, 2003). The question of the purpose of schools emerged from discussions with student teachers and in reflections on this documentary and I found that my own understandings of curriculum and school subjects needed further examination. Noddings' (2002) idea once again began to resonate for me as I considered what it meant to construct a "generic education for anywhere which [can] soon become an education for nowhere" (in Gruenewald, 2003, p. 164). I wondered how

different schools around the university might be seen as somewhere rather than nowhere? I began to re-think how student teachers viewed classrooms and schools as microcosms of the communities in which they were found. The porous boundaries between the outside and inside worlds became even more important in the quest for a 'somewhere' education—an education that inextricably links to and reflects the peoples and traditions of the places around the school and to the communities in which it occurs. In the context of examining how schools influenced and impacted the families and communities in Ladakh, India, I began to understand more nuanced purposes of education and schooling. As I recall this memory of viewing the documentary with student teachers, I recognized the impact of Noddings' (2002) words on my thoughts as a teacher educator. Several questions arose for me as I read my student teachers' reflections and reminisced on the discussions of that day. How could I bring forward the idea of a context-based curriculum as a mirror of the community in which the school exists? What would student teachers need to explore as they entered schools for practicums if they were to avoid teaching a generic education for anywhere? How would my students honour the holistic identities of their students in the contents and pedagogical arrangements of their lessons? When would student teachers and students have the opportunity to engage in intergenerational and cross-cultural practices, learning alongside and from community members? Why was it so important for me as a teacher educator to bring these ideas to bear on my work with my student teachers? These questions reflected the discordances I too was facing—attempting to bring together the vision of place conscious education against a backdrop of a generic education brought on for the most part by a mandated, standardized curriculum. The lenses of my own experiences as a child growing up in a generic model of education compelled me to encourage student teachers to make learning and schooling more relevant and meaningful for the students they would teach. I held onto the hope that in designing school curricula to be tailored to local issues, places, and people, the student teachers might begin to wear down the monolithic nature of a generic and mandated curriculum in order to see their students as infinitely more complex and to reflect this complexity in the contents they were teaching. Perhaps, my questions would support me in broadening student teachers' vision about the purposes of schooling and education to include honouring lived experiences, histories, languages, cultures, and identities in the fabric of learning.

4.4. Memory Reflection: Circle and Circular Pedagogy

My first day as a faculty associate, along with approximately fifty other colleagues, began in a circle. We entered a large room with a circle of chairs to begin what was to be an orientation to the program. I glanced around to check if this was the right room expecting to see a series of tables and chairs in a lecture-style hall to welcome us to our first day. I sat down, expecting to be moved shortly once the program for orienting new faculty associates began. Slowly, as the chairs filled and chatter ensued, I noticed one of the coordinators from the program placing a large stuffed fish in the center of the circle, a salmon made of cloth about two meters in length. Silence fell as she began a story of the salmon travelling downstream, meandering through various waterways, moving with the water into the unknown and reaching the openness of rivers, lakes and oceans. The story proceeded to describe the ways the salmon returns to find home in the rivers where it was born, and how difficult the journey was for the salmon to return to a familiar place. The story mesmerized me as I began to imagine what this salmon was seeing along its journey; I clung to key words that resonated for me about the salmon making its way through the known and unknown waterways: challenge, fear, calm, instinct, places and home.

All through this sharing of the salmon story, the storyteller moved within the circle, turning so as to make eye contact with all the faculty associates sitting around her in chairs. This went on for about an hour and then we were instructed to talk in small groups about our understandings of the story of the salmon. We proceeded to tables to begin our discussions following the experience in the circle. As conversations took place and unfolded organically, it was clear to me that the orientation I was waiting for in some lecture theatre had begun in this circle. I engaged in conversations with colleague faculty associates as we reflected on hearing the story of the salmon moments earlier.

Later that morning, after conversations and a coffee break, we were given time to write about the experience of the story individually. What follows is a summary of my reflections from that morning and the ways in which it shaped my thinking in the early beginnings of my transition from teacher to teacher educator. The reflections I chose represent critical insights from the storytelling experience rather than the totality of my understanding at the time in the moments that resonated at a visceral and emotional level in me. I could *feel* the story as it was shared in the circle, inevitably impacting my thoughts about what it meant to teach and learn.

The water moves with the salmon, and the salmon moves with the water. The story of the salmon is resonating at a deep level for me. So many connections can be made between the story and the critical importance of moving *with* one's surroundings as an educator. How does one move with water? What is the dance between the water and the salmon? What does it mean to work against and with a current that is as powerful as the flow of a river? How can I think about these questions in terms of my work as an educator? I am beginning to wonder about the flow of my school, with the open areas, and large blocks of time, as a large river that calls on me to feel the currents, rhythms, and movements of the pedagogic spaces in which I worked. The students in my school create their own currents in that sense, and I'm like the salmon—strong but shaped by the current around me. Then, at times, I shape the pedagogic space and create currents in which students learn and move. In this dance between teacher and students, salmon and water, I am aware of the inextricable connections at play. (Author Journal, 2003).

As reflected in this journal entry, I thought about what it meant to move with the water as a metaphor for how I envisioned my work as an educator. I began to see the overlaps in the story of salmon moving with water and how this reflected the ways in which I could think about my work as a classroom teacher. The notion of moving with currents resonated as I thought about the ways in which I was attuned to and in synchronicity with students, moving with their needs, and changing the direction of my lessons or plans for learning in response to them. I also thought about the times when my secondary students were 'with me'; there was a kind of rhythm or flow where engagement was high and we were engrossed in activity. It became evident to me that the story was metaphoric *and* pedagogic; the story taught me about the importance of being aware of the interactions at play within teaching and learning spaces in which I found myself now as a teacher educator.

The salmon story also reminded me of the idea that finding home as a teacher was challenging, yet vital, to the work I envisioned doing in the role of a faculty associate. Sinclair (1994) writes about looking for home as a way of finding one's voice to talk "from the inside" about teaching and learning. As the story unfolded to reveal how the salmon struggled against myriad of factors to make its way back to the mouth of the river from where it was first conceived, I could not help but draw parallels to my journey as a classroom teacher who faced many challenges finding home in my practice. One challenge, as I reflected on the time leading up to the moment I found myself in this circle, was convincing my students that I was part of a shared experience of growing up in Canada with them and their families. As a visible minority, I was seen at times as an outsider in what should have been, and what I desperately wanted to call, my "home away

from home” classroom. Indeed, I spent more time in my classroom than I did at home in the early years of my life as a teacher, yet there persisted a kind of hesitation in some of my students to believe me and to believe in me and, although it was never mean-spirited, I felt at times on the periphery of the very place in which a teacher was supposed to be seen as a central figure. I did eventually find home with my students as we learned about science, learned about each other and learned about ourselves in the day-to-day milieu of school life. This homecoming, a returning to the mouth of the river, was evident in the number of students with whom I connected who would come to my classroom (home), and who, later, when we would meet at local stores or businesses in town, would say how much I had impacted them in terms of their interests in science and, how some of them, often females, pursued science as a program of study after a few years in my classes. I share this with the greatest of humility and offer it simply to illustrate the degree to which I had to overcome the challenges to be seen by my students in the ways I saw myself from the inside.

I also faced another challenge when I moved my pedagogical home—from a conventional timetabled school to a self-paced, self-directed school. There was a clear and often painful disconnect between my pedagogical practices as a classroom teacher in a conventional model and the demands of a self-paced, self-directed learning model. The disconnect was, in terms of the parallels I drew to the salmon story, a different way home—unfamiliar, yet with the same end goal of teaching and learning with my students. I found myself drawing on existing skills and developing new approaches to enact the more fluid and meandering ways of learning this new ‘river’ presented to me as a teacher. In my pursuit to find a home in this qualitatively different educational setting, I developed pedagogies such as learning conversations which became foundations for my practice in the self-directed model of the new school. What became evident as I reflected in the circle on my challenges of teaching in a new river was the value of finding my home as a teacher and honouring how I was changed by the experiences of that journey. Returning to the mouth of the river for the salmon, and finding home as a teacher, was marked by one common and salient feature—while I returned to the ‘roots’ of my pedagogy, the roots spoke to me differently because I had changed in the process. Thus, home and returning to the familiar territory of what it meant for me to be a teacher was, in fact, a return to another beginning. As the story of the salmon clearly reminded me, the challenges to return home for the salmon left their indelible marks on the salmon, often visible, but many

invisible, like the memories and deeply embedded recollections of my experiences of confronting my own challenges of teaching and learning.

The theme of this orientation, which soon took a form quite unlike the orientation I had expected on my arrival that day, was “teaching fish to swim”. The irony of this statement seemed obvious at first—of course we don’t teach fish to swim! That’s what they are and what they do. Then, as I continued to contemplate these words, I began to understand the ideas implicit in this simple statement. Teaching students to become teachers was really about awakening their inner nature, their true self, the teacher within them. This meant that my role as a teacher educator was to enhance and bring to the fore this hidden identity through my work with them as their faculty associate. The statement reminded me that teaching and learning are context dependent. In the case of teaching a fish to swim, I thought: “It’s water; of course they have to swim”. Similarly, I began to understand that my students needed to understand their surroundings and contexts as fundamentally calling on them to be teachers; it was integral to being and thriving in their world of schools and classrooms.

The salmon story was perhaps, most importantly, an experience that metaphorically and literally represented learning in circle and the circularity of learning. Sitting there in a circle and listening, learning, and reflecting, I was awakened to the notion of the circularity of my experiences. The endings were beginnings; the journey to a place was a journey away from somewhere else; the day to day of my life as an educator was a coming to full circle with my students—how they saw me was how I saw them and, the experience of learning in community was a series of connections with colleagues from my past, present, and future. While the physical circle engaged me to learn in a different way, it was the circular and recursive telling of the story that was a turning point in this particular experience. I began to develop a deeper understanding of the teacher-student relationship as a reciprocal and continuous exchange of ideas in ways that completely resonated with the learning conversations I had begun to develop in my previous school. *Circular pedagogy* emerged as a way of describing, thinking, and talking about the pedagogical practices leading up to my transition from teacher to teacher educator and my subsequent practices as a faculty associate. The notion of circularity permeated my practices with student teachers in the years that followed this experience.

4.5. Memory Reflection: From Science Student to Science Teacher to Science Teacher Educator

As a student who was passionately engrossed in the world of science—lost in the wonder, discovery, and innovation—my own challenges in learning science at the post-secondary level illustrated the chasm between my views of science, as a discipline that ponders and examines the deeper questions of the universe, and the seemingly infinite irrelevance of what I was learning in chemistry, biology, physiology, and pharmacology in my first few years of university. The chasm was not a barrier; instead, I found myself constantly navigating the terrain between self and subject then and for many years to come as a high school science teacher and, later, as a science teacher educator. The process of examining my relationship to science became the basis for entering into conversations with prospective science teachers regarding the epistemological, philosophical and ontological dimensions in teaching and learning science. In the span of a decade, I developed a number of science methods courses to teach prospective science teachers about inquiry models and history and philosophy of science, and in the process, I re-learned science and began to bridge the chasm between self and subject which I had experienced earlier in my own learning of science as a university student. The following memories reflect turning points in my attempts to bridge self and subject and reveal a kind of *epistemological discordance* that was particularly relevant to my learning and to the learning and growth of the student teachers with whom I worked.

4.5.1. Discrepant events

Discrepant events in science are a collection of counter-intuitive demonstrations and experiments designed to surface prior conceptions and misconceptions about natural phenomena, and bring these into question in light of unexpected outcomes. The idea is to engage prior conceptions, surface misconceptions and facilitate conceptual change. One particularly powerful discrepant event I have used in my teaching is the Cartesian Diver experiment in which a dropper partially filled with water is placed in a water-filled plastic bottle. When the bottle is squeezed, the dropper plunges downwards, an event that counters what many student teachers predict or believe will occur. The discrepancy between observations and predictions opens up the space to examine conceptions about science.

I share this example to illustrate a kind of *epistemological discordance* I notice in student teachers as they encounter discrepant phenomena. Their understandings about scientific laws and reasons come into question, assumptions are surfaced and beliefs are challenged about the behaviour of natural laws causing them to re-formulate their thinking from a different set of observations. Through the application of the “predict, observe, explain” (Gunstone, 1991) inquiry framework, the student teachers engage in making sense of the discrepancies they observe. For many student teachers, and in particular those who were science degree holders, experiencing discrepant events prove both unsettling and instructive. Student teachers begin to appreciate the tentative nature of scientific knowledge, the subjectivity of observing and describing scientific phenomena, the importance of creative and divergent thinking, and the need for models in science. Their views of science are challenged by these events in ways that engage them in another kind of chasm—the space between the sum total of their science knowledge from four years of undergraduate study and the inability to predict the behaviour of natural phenomena.

Another aspect of teaching through discrepant events was their power to spark deeper learning and engagement in student teachers. Aside from the science of the phenomenon itself, I began to witness the impact the discrepancy had on student teachers as they became disposed to posing questions about what they encountered. In one particular case, I recall the student teacher reflecting on the experience of observing the Cartesian diver experiment by generating a series of questions about the phenomenon under investigation such as: What factors impact the movement of the diver? How can the rise in the water inside the bottle be explained? How would this work if we changed the amount of water in the dropper? What became apparent as we continued to explore the NoS, and constructed our understanding about science, was the powerful learning that emerged from generating such questions. It was as though we were re-learning science using language and drawing on concepts previously hidden beneath the shadows of science degrees and years of rote memory. As we continued to approach our work in this vein of a questions-driven curriculum, student teachers developed a stance of inquiry by posing questions and examining their assumptions based on what they observed and experienced whether in the university classroom or in practicum settings. During a visit with student teachers to an elementary school that had developed a project-based learning focus, I recall stating:

Whenever we step foot into a school as educators, we ought to think of it as one big POE—predictions, observations and explanations about everything we learn from the phenomenon of schools. We must remain open to discrepancies, the unexpected, and the unfamiliar. It is an opportunity to learn and unlearn what we think we know about schooling and education as a whole. (Personal Communication, 2006).

This statement became an important point in my practices with student teachers, and indeed, in my own journey of learning as a science teacher educator: it symbolized the overlapping the NoS and teaching about teaching. The epistemological foundations of science, in particular inquiry and the use of discrepant experiences, shaped my practices as a teacher educator. I designed my courses around questions rather than outcomes, I engaged student teachers in experiences prior to introducing theoretical ideas and I based my teaching on the philosophical commitment that knowledge is tentative and requires rigorous scrutiny by multiple means. The *overlapping* of pedagogies informing my practices as a teacher educator served many functions, but one in particular: the chasms I had experienced in my own science education were ones I attempted to address in teaching prospective science teachers. In the midst of discordance, *overlapping pedagogies* allowed me to navigate the ebb and flow of teaching science, teaching *about* science, and teaching *as a science*.

4.5.2. Angular engagement

In one of my early years as a coordinator of new programs in teacher education, I was asked to draft a report highlighting what I believed to be valuable features of the programs in which I had taught in order to contribute insights on the development of future programs for prospective teachers. As the university attempted to diversify its offerings, such reports were informative to the discussions taking place. In generating this report, I reflected on the experiences that were most unsettling—at times jarring—and which were informative to my teaching at the time. In looking back, I realized that discordance again surfaced in what I chose to document, being naturally drawn to the experiences that seemed odd or discrepant to what I would have expected in that context. There were times when these experiences seemed to come from nowhere and yet they led to deeper understandings about pedagogy and the roles of teacher, students, and curriculum. The following excerpt from one of the reports I drafted as a coordinator in a teacher education program illustrates this:

One of the key features that made programs deeply informative and transformational for me as a teacher educator was what I would call “expecting the unexpected”. Here, I refer to discrepant experiences both in faculty associate program and in the module that perturb our prior understandings about teaching and learning. These events are significant in terms of engaging us in envisioning new possibilities and developing new language for the work we do as educators. I’m thinking of the experiences of taking student teachers to Stanley Park, Belcarra, Deep Cove, and Sun Yet Sen Gardens, the somatic experiences (role plays, embodied practices) and what I have termed *angular engagement*—approaching topics and issues from a less predictable angle/trajectory. A great example of this angular engagement was when we addressed the question “what is learning?” in our faculty associate program by experiencing learning in culinary, equestrian, aquatic, and artistic contexts. We observed and experienced learning as the subtext to being in places, in communities and in relationships with the people who we met at the various sites. What we learned was that learning took on so many forms and trajectories—it was subtle and nuanced, yet so powerful in terms of propelling our understanding of the roles of teachers, students, and curriculum. Most importantly, these angular engagements enhanced our language and gave us new ways to talk about pedagogy. We were able to shed the burdens of seeing teaching, learning and curriculum solely through the prisms of schools and classrooms and began to articulate them in reference to power, place, context, identity, and community. By creating dissonance through these angular engagements, the processes of transforming from classroom teacher to teacher educator were catalyzed and, ultimately, this was translated and carried forward into the programs that the faculty associates developed for their modules. I believe these kinds of experiences were and continue to be invaluable in the development of any program, whether for teacher educators or for student teachers. (Coordinator Report, 2010).

Angular engagement shaped my teaching from this point forward. As I continued to develop programs and consider how to teach about teaching, I focused on ways of knowing and learning in a variety of forms. We learned in outdoor settings, by going on rides at a local amusement park and by visiting Longhouses. We also explored learning as intergenerational storytelling by interviewing different generations of family members about how they learned, and we listened to architects, chefs, and athletes describe learning in relation to developing expertise. These angular engagement activities became powerful tools because they facilitated the development of learning in new ways, not just learning more about the conventions of best practice pedagogies. Classroom management techniques, for example, were not necessarily the learning outcomes of these activities. The intent was to identify unique and hidden aspects of learning through various angular engagements in order to highlight the subtext of teaching and learning student teachers.

4.5.3. Making the invisible visible: Conceptual change

A core theory informing science education is conceptual change. As Lederman (1992) suggests, conceptual change in science is categorized into the ability to assimilate new information (into existing schema) and to accommodate new ideas by changing existing patterns and structures of knowing into our prior schema. The processes of conceptual change require an understanding of the conditions or conceptual ecology required to assimilate or accommodate conceptual knowledge. Not unlike the learning that is provoked by discrepant events, conceptual change is a process of learning that accounts for how the observed discrepancies lead to altered conceptions of the phenomena under investigation. Through the lens of conceptual change as a mechanism for learning, the following memories detail my encounters with conceptual change in teaching science methods courses. I preface this section with an excerpt of an email response to a colleague:

I'm with you on the resistance piece, and so is the research/literature. Conceptual change is still an ideal and the deeply rooted ideas/misconceptions/prior knowledge that students come in with are very difficult to actually change. However, I'm a believer in the impact of the metaphysical world on our bodies and minds—I'm stretching here a bit—but if one considers the ripple effect created by perturbing deeply held notions, it might be just enough to change one's perspectives. I'm yet to be convinced that actual "change" in thinking can happen so quickly. What can happen, perhaps, is a shift in perspective about those assumptions/ideas/misconceptions. I've often used my story of dragon boating down the Pitt River and seeing the new Pitt Bridge from the water—same bridge, different perspective and I suddenly saw "it" differently. Perhaps we simply don't do enough to perturb or jar our students' thinking to have them see teaching, learning, and schooling differently. Maybe we simply don't create enough ripples in learning. (Email Communication, 2011).

4.5.4. Mind Walk: Politics, poetry and science

4.5.4.1. *The shadow side of science*

My own science education was informed by and shaped in the paradigm of “science as progress, science as discreet specialities, and science as connected to and relevant only to other science and scientists”. The reasons to learn and teach science were rooted in the notion that science involved learning “more and more about less and less”, a phrase I used to describe my own learning as a university science student. Harre's (1970) notion of atomism defined this paradigm that viewed the universe as made up of

small parts, or corpuscles, a view that gave rise to enduring scientific understandings such as Newtonian laws. However, as the end of the 20th century approached and reforms in science education abounded, such as the Benchmarks for Science Literacy, Project 2061 (AAAS, 1993), the paradigms of the atomistic, compartmentalized and disconnected world of science came under question, in particular as this paradigm was affecting science learning and achievement in schools. Furthermore, the view collided with Indigenous and other worldviews that were coming to the fore in conversations about ontological and epistemological commitments regarding knowledge at the time. Additionally, the rise of feminist scholarship introduced critiques regarding objectivism and binary thinking. It was within this turbulent context that the film *Mind Walk* (1991) was inspired by Fritjof Capra, a physicist who had written several books including *The Turning Point* (1982), on which this film was based. In short, the story involves a poet, a politician, and a physicist who meet each other while visiting a tourist site in Mont St. Michel, France. The ensuing conversations about the history and philosophy of science between the three make up the bulk of the film, and reflect the growing need at that time to critique the status quo, envision science differently, and to understand the relation between science and society. Through their conversations, it becomes clear to viewers that scientists and science ought be concerned with protecting the environment by reducing greenhouse gases and tempering progress in the face of ethical dilemmas of animal testing and cloning. At a time when global awareness about pollution and environmental harm was on the rise, this film attempted to situate the conversation within the roles that politics and science played in the planet's survival. In the span of the sixty-minute film, the three main characters take walks and converse about their perspectives on science, politics, and the natural world through the prism of this critique of science. In essence, the film presented the *shadow side* of science—from an historical perspective, to contemporary concerns of whose knowledge counts in science, how that knowledge is acquired and at what cost, and how that knowledge is being applied and for what aims. By contemplating these deeper issues, the film provides a metanarrative that was absent in my science education and continued to be missing from my experiences as a science teacher educator.

4.5.4.2. *A crisis of perception*

Capra wrote about many of the issues deliberated in *Mind Walk* in an article published in the *Futurist*. In this following passage, he claims that a *crisis of perception* is

limiting our ability to see science and its relationships to the world around us in more contemporary ways. He states:

The more we study the major problems of our time, the more we come to realize that they cannot be understood in isolation. They are systemic problems—interconnected and interdependent. Stabilizing world population will be possible only when poverty is reduced worldwide. The extinction of animals and plant species on a massive scale will continue as long as the Third World is burdened by massive debts. Only if we stop the international arms race will we have the resources to prevent the destruction of both the environment and human life—the flooding of coastal cities caused by global warming, large-scale loss of cropland with ensuing malnutrition and famine, and so on. Ultimately, all these problems are facets of one single crisis, which is essentially a crisis of perception. We are at the beginning of a change of worldview as radical as the Copernican Revolution—a shift from a mechanistic to a holistic and ecological view, from a value system based on domination to one based on partnership. Such a shift is now crucial if we are to survive and build a sustainable future. But this realization has not yet dawned on our political leaders, or our corporate leaders, or our universities. They are captives of the same outdated perceptions that have brought about our global crisis. These perceptions, which have shaped modern Western society and have significantly influenced the rest of the world, include the view of the universe as a mechanical system composed of separate building blocks; the view of the human body as a machine; the view of life in society as a competitive struggle for existence; and the belief in unlimited material progress to be achieved through economic and technological growth. (Capra, 1990, p. 21).

I remember the first time I watched *Mind Walk*. It was a visceral experience. I was at home and had put aside some time to watch the film in preparation for teaching the science methods course in the summer semester. I was captivated by the clever ways in which the three characters spoke of the NoS and scientific worldview through their diverse perspectives. They discussed examples such the invention of the clock as a metaphor for a mechanistic, Cartesian view of the universe in contrast with a holistic and interconnected view of science—one that regards science as more than discreet disciplines and limited to and by the scientific method. The characters presented science true to its nature—tentative, context-dependent, theory-laden, and creative. This view was presented as a new vision of science that would bring clarity to the role of science in the preservation and survival of the planet.

My senses were awakened to a vision of science that resonated deeply within me. The worlds of science, art, history, philosophy, and politics merged in the poignant insights shared by the poet, politician and physicist throughout the film. I felt a deep connection, as if I were watching my personal vision as a science educator play out in their narratives

about science. Science was being re-imagined as holistic, interconnected, philosophic, historic, metaphoric, and artistic—qualities that I believed were inherently a part of science but had never been reflected in anything that I had actually learned about science. It was as though someone had listened to the voice inside my head that lived in the tension of seeing science in one way but learning it in another. The *crisis of perception* alluded to earlier was playing out for me as I viewed the film: Why didn't anyone talk about science in this way before? Why wasn't this view of science as interconnected and inherently philosophic written about in textbooks like this? Why did I not learn about the history and philosophy of science in my education as a science student or as a science teacher? I wondered if my student teachers would also suffer from this *crisis of perception* of not having learned the interconnected, holistic, and ecological view of science and thus, having little to no experience in connecting science to global concerns of extinction, poverty and warfare. The discordance of viewing this film and hearing refrains that I had not heard before in my journey as a student or teacher of science revealed my own *crisis of perception*—I disregarded my beliefs about science in preparing to teach it to student teachers. I recall feeling excited and passionate about teaching the course in a way that I had not prior to viewing the film. The experience changed how I approached teaching the science methods course that summer. I was committed to having student teachers leave the course understanding science differently: a worldview of science beyond the mechanistic and atomistic to the holistic, interconnected, and ecological.

4.5.5. Navigating practicum

A colleague teacher educator and I decided to host 'meet ups' with our science student teachers during their certification practicum to better understand their experiences of moving from the program on campus to practicum in schools. We had been grappling with conceptions of the third space of teacher education between university contexts and the practicum or professional setting (Zeichner, 2005; Martin, Snow, & Torrez, 2011). We were curious about how student teachers navigated this third space and how they conceived of practice in the real time of schools in relation to the contents of their science methods courses on campus. While we understood this to be a classic dilemma facing teacher education, we were purposeful in our teaching of science methods to address the theory-practice chasm and support student teachers to overcome or at least mitigate the third space created by the different contexts in which they operated. As teacher educators,

we talked at length about our lessons and how to model “approximations of practice” (Grossman & McDonald, 2008) in science education by demonstrating instructional approaches such as inquiry and cases in science. We anticipated student teachers would struggle to apply the instructional approaches modeled by us in their practicum settings because of the factors related to the theory practice chasm articulated earlier, yet we were optimistic and hopeful that modeling lessons might be effectively transferred and contextualized within the practicum classroom setting.

With this outlook, we set out to learn more about student teachers’ perceptions and experiences through these meet ups with a small group of five science student teachers during their practicum over the course of three months. We met with them three times during their practicum at local coffee shops. The conversations were intentionally informal at first but became increasingly focused as we learned more about their experiences. During each session, my colleague and I took notes and following our meet ups with student teachers, we debriefed and wrote emails to each other about our reflections on the conversations we had with the student teachers.

The ideas of discordance had been prevalent in my mind as I considered the power of teaching through the use of discrepant events in science during our methods courses. Increasingly obvious to me were the parallels between this and the discrepancies encountered by student teachers on practicum. I began to view the practicum as a series of discrepant experiences that contributed to student teachers’ evolving understandings of practice in the contexts of schools and classrooms. What were the experiences that might spark such learning? What did they learn? How was this learning different than learning through coaching or modeling? How did discrepancy play out in their practicum teaching? These were a sample of the questions we pondered from the meet ups over the months of practicum.

Following the second session, I had an epiphany about student teachers’ conceptions of practice in practicum settings. My colleague and I had been discussing the notion that discrepant experiences tended to put student teachers, for lack of a better term, “off kilter”, or in a precarious position in terms of learning. This created an interesting visual in mind—the student teacher, slightly tilted as if on one foot balancing on the edge of a solid surface about to fall but tethered just enough to remain stationary. Taking this image further, it was as though student teachers were in the third space between the

university and practicum (Zeichner, 2005), neither here nor there but hanging off the edge in a place where they had to draw on their own faculties to keep from falling. While the common issues of stress, time constraints, classroom management or marking assignments were discussed, the epiphany came from the realization that learning was intimately connected to and predicated on a sense of *vulnerability*. What initially seemed to be a set of conversations about lesson planning and management, became more sophisticated accounts of practicum as sites of exposure—of their “vulnerable selves” as student teachers. They talked about the unpredictability of teaching science in their practicum based on differences between what they had planned in their units of study and how those lessons actually played out in the classroom and shared feelings of uncertainty about the decisions they made and the risks they were taking in trying to teach science using the approaches learned in the methods courses. Yet, they were concerned with the impact on their observation reports as pre-service teachers. Somewhere in the chasm between the university and the practicum, practice evolved from the approximations on campus to discrepancy and discordance in the practicum, and exposed the vulnerable self in ways that were not evident in the methods courses we had taught. In drawing on this memory, I examined email exchanges with my colleague following this meet up during which I had come to this understanding about the role that vulnerability played in student teachers’ experiences in practicum. The following is an excerpt of a segment in which I wrote of the recognition of vulnerability in learning to teach:

I’m thinking here about the support they need to take risks and learn from their practices. I’m beginning to appreciate how important it is for them to *be* vulnerable in order to experience the practicum differently. Perhaps the conditions which encourage our students to be more open to taking risks, learning, reflecting, and allowing them to “surrender” to the experiences are being hidden under the demands of practicum assessments. How can we support our student teachers to enter into a vulnerable space in practicum where they could learn from surrendering to the experiences? What conditions give rise to this vulnerability that remains hidden from the context of the practicum experience? It makes me think about the *un-vulnerable* space as a place of affirmation rather than contemplation. Are our student teachers contemplating their practices or are they affirming them, or both? This also causes me, once again, to deeply question the epistemic validity of assessing/evaluating students on their performance as developing teachers. This is a salient point—we don’t actually assess the cultivation of a mindset that is disposed to learning, we assess the performance of the objects learned and goals achieved. A student teacher might need to fail or have challenges many times before they become adept at learning about their practice. I guess what I’m talking about is a dissonance that opens up spaces for vulnerability—one that can lead to powerful learning. When the student teachers surrender to the discrepancy/dissonance in practicum, they *learn differently*, and I

would argue, they learn more enduring and meaningful knowledge. (Email Communication, 2014).

I continued to contemplate the epiphany of the role vulnerability played in instigating learning. I began to understand that discrepant experiences not only impacted student teachers' conceptual schema and conceptual change in terms of learning science concepts; these experiences cultivated the condition of *vulnerability* in learning. Hence, as the meet ups illustrated yet another insight about the third space between programs and practicum settings, by placing vulnerability squarely within that space, I began to see potential value in focusing on the conditions of vulnerability in terms of teacher development. While I had been reading literature that viewed the theory-practice chasm and the third space of program and practicum negatively, I had experienced the epiphany that this space was actually quite powerful in supporting student teachers' learning to become science teachers.

4.6. Transitions

In closing this chapter of memories and memory reflections, I return to the lines of thinking informing this thesis. Through the process of self-study, I posit the memories of my life as a teacher educator have an authority in shaping my growth and learning over these years and the understandings of practice I developed. The lenses of knowing illuminated the multiple dimensions and perspectives at play in the memories as I drew on learning from colleagues, student teachers and literature. The autobiographical curriculum situated me as the subject of this study and my experiences as the complicated conversations between the public world of my practices as a teacher educator and the private sphere of meaning-making. The memory reflections captured learning that emerged in the spaces of self-study—between the self as researcher and the memories as the researched. As I transition from this collection of memory reflections to the final chapter, my thoughts return to *learning from experience*. What did I learn from the memories of my experiences as a teacher educator? How did the self-study contribute to and facilitate my learning? How can this learning be conceptualized and what assertions about practice can be made that are coherent, epistemologically aligned to the nature of the memories themselves, and arguably valid given the methods employed in this study? What value will the learning have for teacher educators and teacher education? The following chapter presents my learning from the research into my experiences, including reflecting on the process of engaging in self-study research, understanding the nature of

self-study, the identification of *pedagogical orientations* as the knowledge of practice developed through this study and the conceptual framework of discordance in relation to my growth as a teacher educator.

Chapter 5.

Understanding my Journey as a Teacher Educator

The preceding chapters have given readers a window into my experiences as a teacher educator through the memory reflections of practices of teaching about teaching. My life as an educator became defined by this rich tapestry of people, places, and activities; at times this tapestry included strands of stories that were filled with difficulty, irony, and unease, and, other times, the stories were uplifting, soul-filling and joyous. The profundity of the experiences left indelible impressions on me as an educator: I believe I became a more effective teacher, I learned how to be more present in an experience, and I learned that reflection, which had become *part of my DNA* as a teacher early in my professional journey, was still the fundamental basis on which my professional journey progressed. I could leave it here and say that simply writing the memory reflections served me well enough. However, they did more. The memory reflections deepened my understanding of my practices as a teacher educator and allowed me to develop insights regarding colleagues and students with whom I worked, of the places and contexts that give rise to these memories and of ways of knowing that defined how I learned and what I learned. Furthermore, by unearthing hidden meanings and lost insights, the memory reflections opened up spaces of theorizing and concept building, consistent with the methodologies of theoretical inquiry and self-study, leading to assertions and understandings presented in this chapter. What follows is the outcome of this theorizing: knowledge of practices arising from a recurring cycle of discordance. In considering how my practices were transformed, re-invented, and altered, the following sections give definition and meaning to what I learned from this study and how this learning can inform the work of other teacher educators.

5.1. Learning from Self-study Research

Berry and Loughran (2005) suggest that the findings of self-study research be considered in terms of *assertions for action and understanding* rather than in terms such as results and conclusions. This view is predicated on the belief that the kind of knowledge developed from self-study is different and therefore not sufficiently represented by more traditional research language. Pinnegar and Hamilton (2009) remind us that “S-STTEP

researchers see their research as developing *living educational theory* (italics in original)—theory that lives because it changes and grows as our experience deepens and our practices change and because that growth becomes evident in our practice” (p. 164, 2009). In this way, *living theory* forms the basis for making assertions and understandings. Furthermore, knowledge from self-study is seen as tentative, open to negotiation, and complicit in propelling continued self-study. Thus, in presenting the following assertions and understandings, I contend they be considered fluid and tentative in nature, yet demonstrate authority by the depth and persistence of their impact on my practices as a teacher educator.

In structuring this final chapter, I turned to Berry’s (2007) framework for presenting the outcomes of her self-study of her practices as a teacher educator teaching prospective biology teachers. Berry (2007) states:

The manner in which I conceive of my learning over the time of this self-study can be organized according to four areas: 1. Reflecting on the process of engaging in this research; 2. Understanding the nature of self-study; 3. Knowledge of practice developed through this research; 4. ‘Tensions’ as the conceptual frames for doing and understanding research. (p. 153).

The remainder of her analysis is guided by these four areas as she explicates the complex nature of self-study in presenting assertions from the longitudinal study of her practice. The salient points she makes about self-study which directly apply to this thesis are: a) Self-study brings together “teaching about teaching as a *practice* and teaching about teaching as *research*” (Berry, 2007, p. 160); b) Self-study is not just a methodology for studying practice, it serves to change practice and facilitate growth as a teacher educator; and c) Tensions are not only frames for understanding practices, they are embedded in the initial questions driving the study—tensions are seen as a *continuous thread*. These three aspects of her analysis conveniently fit with the manner in which the assertions and understandings are presented in this final chapter.

Adapting Berry’s (2007) framework, the final sections are organized in two parts with subsections as follows: Part A) Self-study as a process and a practice including discussions about reflecting on learning from experience, the nature of self-study, knowledge of practice from self-study and the cycle of discordance as a conceptual framework; and, Part B) Implications for teacher educators including discussions about

trusting discordance to facilitate learning, defying patterns, responding to concerns in the field of teacher education and questions for further study.

5.2. Part A) Self-study as a Process and a Practice

A key tenet that emerged from studying my experiences and practices as a teacher educator through the memory reflections was the *folding over* of evidence and process. As I reflected on particular memories, the discordance that initially drew me to think of these experiences was further enunciated through the writing process. Self-study as a process meant I was studying experiences to dwell in the spaces of research that could lead to assertions and understandings about my practice. However, in doing so, I also practiced self-study by studying particular experiences, re-learning them through the memory reflections. For example, in the memory of meeting with student teachers to hear their practicum stories, I reflected on the experience and reflected on the reflection of that experience—my image of the third spaces of practicum and program were altered by this *folding over* of process and practice.

5.2.1. Reflecting on learning from experience

5.2.1.1. *Living through experience*

At the outset of this thesis, learning from experience was introduced as a way to frame how I understood the epistemology of experiences. As a teacher educator having been in various roles and contexts, I could draw on many experiences that shaped my practices over the years. However, in taking the stance that learning from experience meant I *lived through* experience, my view of experience shifted from the day to day interactions and activities of teaching about teaching to the more salient, troubling, dissonant and, at times, uneasy situations which stayed with me. Thus, in choosing particular memories as I did, I held to the commitment that memories were more than daily happenings—they were epistemologically rooted in discordance and thus were ones that represented times of growth and transformation in my practices and in my identity as a teacher educator.

The notion of *living through* experience gave rise to another aspect of the experiences shared in this thesis—they inspired shifts in my understandings. I grew and learned, changing practices, shifting perspectives, moving from one set of understandings

to another as a result of the experience. For example, in the memory reflection “Metaphors and Missteps—Transforming Teacher Identity”, I shifted the way in which I conceptualized teacher identity after realizing that my previous practices and curricular approaches did little to fully appreciate the kinds of transformations the FTTs were experiencing as they searched for their new “teacher homes” in BC classrooms. Additionally, by living through experiences, I became fully alive in my work as a teacher educator and transformed as a result of the experience. This meant that the memories allowed me to find my heart as a teacher, to bridge the discordances I was experiencing between what Palmer (1998) refers to as identity and integrity and belief and action. Thus, *living through* experiences allowed me to consider my experiences as a teacher educator, and in particular the memories written in this thesis, as integral to my growth and transformation to this day.

5.2.1.2. *Discordance as a recurring cycle of reflective dissonance*

Discordance was a recurring theme in experiences. Studying my practices as a teacher educator and thinking back to times that stayed with me meant that I had chosen to honour dissonance and discordance throughout the experiences of teaching about teaching. Some memories created visceral responses, such as the place-meaning reflections, and others created cognitive flux in my perspectives, such as in the science teacher educator memory reflections. The recurring cycle of discordance that permeated and shaped my experiences was not only evident in the written memory reflections, it surfaced in the multitude of programmatic designs informing teacher education discussed in Chapter 2. The survey of literature highlighted the discordance that arose from disconnects between the aims of teacher education and the means to achieve them.

The self-study of my experiences revealed several important understandings about *reflective dissonance* as a recurring feature. While reflection permeated all aspects of coursework and practicums in various contexts, reflective dissonance seemed to require a more deliberate focus on those experiences that perturbed my thinking as well, as in the experience of my first orientation to working as a teacher educator in “Circle and Circular Pedagogy”. When teaching student teachers, I found it important to also expose them to diverse perspectives on issues and engage them in counter-intuitive experiences such as viewing the “Schooling the World” documentary. Different in quality than the “thinking in, on and for action” reflections written by student teachers during practicum, reflective dissonance as a process of learning from experience squarely focused on the

aim of self-understanding by confronting diverse perspectives and challenging assumptions. Learning that involved a recurring pattern of reflective dissonance inevitably involved critical analyses of personal beliefs, values, and worldviews. Reflective dissonance consequently situated learning in the nexus of beliefs and practice with the aim of transforming teacher identity.

5.2.2. The nature of self-study

5.2.2.1. *Reflexive*

I learned from my experiences and memories by understanding the reflexive nature of writing in self-study research. Not unlike Berry's (2007) assertion that self-study is responsive research the reflexive nature of self-study locates this research in the nexus of action and thought. As I wrote of experiences through the memory reflections, I learned more about the practices that lead to the discordance in the first place and new ways of articulating my practice by looking back at those memories—reflexivity came from a cycle of action–thought–action. The reflexive nature of self-study was also valuable in adding dimension to my identity as a teacher educator. By writing memory reflections, I honed my practices and defined my beliefs as a teacher educator in response to the events at the time. My memories became the prisms through which I viewed who I was and who I had become in my transformations of identity over the course of the years represented in this thesis. As I continue to evolve and grow in my roles, the reflexive nature of self-study research defines how I learn from experiences and how I gain greater knowledge of self as a teacher educator.

5.2.2.2. *Transformative*

Self-study, as a process of research and a practice of teacher educators, is transformative. While the manner of engaging in experiences fostered my growth and understanding, studying those experiences I lived through and writing reflexively about them created conditions for changing my practices and re-evaluating my beliefs—the memory work was transformative. Situating the study between action and reflection, practice and conceptualizations through the reflexive process of writing memories implicated the self as a subject of the study. Thus, as the self-study played out, studying the self as teacher educator by analyzing my practices required me to confront change—in my actions, visions, beliefs, and ways of being.

A large focus of this study was recognizing *living through* experiences as a provocation to become fully alive in the ways I imagined my identity and practices as a teacher educator. The nature of self-study comes to include this aspect of transformation—the opportunity to understand self-study as a continuous loop between the self drawing out particular experiences and the experiences drawing out particular aspects of the self. Self-study research thus holds the potential to expose hidden “selves” of identity as a teacher educator, such as in the context of examining my image of science from the perspective of a student, a science teacher and a science teacher educator. In the process, I re-learned science through viewing Mind Walk, interacting with discrepant events, and confronting the crisis of perception ultimately leading me to crystallize my beliefs about science and clarify my image of science. In doing so, I brought greater integrity between my “teacher epistemology” and my practice in teaching prospective science teachers.

5.2.2.3. *Messy, slow, layered*

One might consider this thesis as the retrospective study of memories, situated within the context of the aims, methods, and analyses defined within these chapters. In reality, the self-study has been underway since my earliest discordant memories in the various roles and contexts of my professional journey. It seems more accurate to consider this self-study as a *continuous thought* in the unfolding of events of my professional journey and in making meaning of the experiences I had as a teacher educator. The slow, evolving nature of self-study is grounded in the realization that studying the self in relation to the experiences one has is by design slowed by the ebb and flow of thinking and action, contemplation and assertion, and being and transforming. Yet, within the continuous nature of experience, it is important to limit and set parameters in self-study research, in this case accomplished by focusing on particular memories rather than the sum total of all my years of practice and writing the memory reflections over a span of one year. The nature of self-study can also be considered messy and unpredictable—knowing the memory cognitively, yet re-experiencing them through reflective writing which leads to previously unanticipated insights and responses. Self-study research becomes *layered* in this sense, nested within a collection of discordant memories, while cognizant of not getting “caught up in myself as the purpose and focus” of the study (Berry, 2007, p. 160). Rather, the slow and messy nature of self-study called on me to remain inquisitive about the multiple layers of practice with student teachers, interactions with colleagues, and the

contexts of various teacher education programs through which I gained valuable insights into my development as a teacher educator.

Turning points (Bullock, 2014), situations when dissonance was particularly evident in the memories, highlighted the unpredictable nature of self-study. As I documented experiences and reflected on key turning points through memory reflections, I realized the self-study hinged on reconnecting with the experience at a point when my practices and perspectives were shifted. Thus, it became apparent that self-study was, by nature, about problematizing rather than problem solving (Berry, 2007) and the points of change were integral to raising the status of experiences as significantly more valuable to my practices as at teacher educator than I had previously assumed.

5.2.3. Knowledge of practice from self-study: Pedagogical orientations

The following assertions and understandings about my practices as a teacher educator emerged from this study. These practices, named as *pedagogical orientations*, are similar to the “signatures” (Shulman, 2005) or specific disciplinary knowledge characteristic of becoming a teacher. Bullock (2009) suggests we learn from systematic inquiry into our practices in order to articulate teaching as a discipline and thereby construct a pedagogy of teacher education. Through the inquiry into my experiences, I introduce these pedagogical orientations as signatures of the discipline of teaching about teaching that were prevalent throughout my memory reflections. Notably, the pedagogies outlined in subsequent sections not only represent practices with student teachers and colleagues, they remind us that practice must keep in view the education of children and youth as an ultimate goal of teacher education. Pedagogical practices thereby serve to bring knowledge from this self-study to the fore as possibilities for considering the greater reach of learning to teach and teaching about teaching.

5.2.3.1. *Place-meaning and place-conscious pedagogies*

It was evident through the place and placement memories that the concepts of ‘place as teacher’ and ‘place-meanings’ were essential to my learning and growth as a teacher educator. Remembering and reflecting on early place memories attuned me to be conscious of place in a way that was profoundly pedagogical (Gruenewald, 2003). I learned from places where I had grown up as a child to the places I experienced as a

teacher educator. In some cases, these places—childhood sites, international practicums, local schools, and teacher education classrooms—created discordance because of the ebb and flow between the *familiar and unfamiliar* aspects of the place. For example, finding my home as a teacher in my transition from teacher to teacher educator required me to reconnect with my practices in new ways. As I sought to connect the places of my life journey with my practices as a teacher educator, the ebb and flow of the familiar and unfamiliar served to highlight several dimensions of teaching about teaching. I learned that teaching student teachers needed to be place-conscious not only of the traditional lands of First Nations communities, but conscious of sociological, political, ideological, and geographical dimensions that informed schooling and education (Gruenewald, 2003). The experiences of working with student teachers in international contexts highlighted this important aspect of teaching—it needed to be informed by teaching in/about/for place (Orr, 2009). Another dimension of place pedagogy was centered on place-meanings. I learned about the value of finding meanings of and in places, believing that the kind of learning that emerged from being in places was qualitatively different than teaching from a distance or from the confines of teacher education classrooms. The discordance also prompted me to develop ‘place meanings’ as knowledge that comes from being attentive to the dimensions of place such as finding home and surrendering in the international practicum site in China.

5.2.3.2. *Circular pedagogies and interconnected learning*

From studying my early experiences of becoming a teacher educator, I learned about the circularity of teaching and learning. As I stated: “The endings were beginnings; the journey to a place was a journey away from somewhere else; the day to day of my life as an educator was a coming to full circle with my students—how they saw me was how I saw them and, the experience of learning in community was a series of connections with colleagues from my past, present, and future.” I began to understand practice as a teacher educator as engaging in circular patterns of teaching, learning, reflecting, thinking, acting and being interconnected and mutually dependant. I realized that each experience included elements of this circularity, represented by the oscillation between the familiar and unfamiliar, assumed and experienced, and expected and unexpected. The examples of teaching prospective science teachers using discrepant events and the salmon story highlighted the power of viewing pedagogy as a way to navigate circularity and teach in

more connected and interconnected ways. In both examples, circular pedagogy oriented my learning to bring together self and the phenomena I was experiencing at the time.

5.2.3.3. *Metaphoric pedagogies*

Metaphoric pedagogies emerged as a practice of teaching about teaching in two distinct yet related ways. I realized that in the experiences that gave rise to discordance, such as in the case of working with FTTs, metaphors served to clarify the issues and helped to navigate through the discordance. Metaphors served as explanatory frameworks for articulating the discords of transforming practices from one context to another and understanding the complex nature of teacher identity. By using the metaphor of a teacher house, I developed language to talk about the dimensions of teacher identity, as demonstrated by the example of FTTs drawing rooms to represent their understanding of renovating their roles and responsibilities as teachers in the contexts of BC schools and classrooms. While metaphoric pedagogies were evident in my practices, the reflexive process of writing memory reflections precipitated in developing metaphors to describe the discordance I experienced at the time. The naming of experiences as “tunnel vision” and the “shadow side of science” emerged as another way to use metaphors in learning from experience: metaphoric representations to *study* my experiences. By using language in this way, I aimed to illustrate the nature of discordance in my experiences and provide the reader a way into understanding the memories of my practices as a teacher educator. While metaphors factored as part of the practice and research in this study, I caution that the metaphors themselves did not replace the meanings of these experiences in their entirety; instead, they gave the reader approximations of my lived experiences and defined the manner in which I made sense of my memories.

5.2.3.4. *Epistemic pedagogies*

In method courses, I realized the NoS was integral to teaching student teachers how to teach science. As I developed more robust images of science as a teacher educator, knowledge of the NoS provided me with the language to articulate processes of teaching and learning science with my student teachers. I learned that multiple approaches enhanced learning and engagement such as the modeling of inquiry methods using discrepant events, discussions about the film *Mind Walk* and using practicum stories to expose epistemological tensions. My teaching grew to include explicit-reflective approaches to understand the NoS (Abd-El-Khalick & Lederman, 2000). *Epistemic*

pedagogies framed my approaches to teaching—by focusing on teaching the NoS, the ‘what’ and the ‘how’ of science came to the fore in more pronounced ways. As a science teacher educator, I re-learned science with student teachers by drawing attention to the tenets of the NoS and exploring the epistemology of teaching and learning science.

5.2.3.5. Practice as pathways to self-understanding

In addition to developing pedagogical orientations as assertions for action, studying my practice memories lead to *self-understanding* generated through the reflexive nature of memory work. By analysing memories of engaging with student teachers, teaching and collaborating alongside colleagues, and reading literature relevant to the discords I experienced at the time, I learned how my practices, beliefs, and visions changed. I grew to appreciate the ambiguous, organic and fluid nature of learning how to *be* as a teacher educator. My practices were clarified and reconceptualised as orientations and I noticed that I was learning alongside my student teachers—we grew and changed together. I learned the value of slowing my gaze and taking in the experiences as foundations for developing courses and curriculum experiences to teach prospective teachers. I came to view my learning as a series of transformations brought on by discordance: a greater focus in my practices on the lived curriculum, intentional inclusion of discrepant and dissonant experiences in teaching, greater emphasis on the processes of learning than on outcomes, situating reflection as a means to learn as much about self as of practice, and seeing myself as having the potential to be an agent of change in the larger scope of education by encouraging student teachers to “leave with more questions than answers” as they completed their teacher education programs. Self-study methodologically required that self-understanding, including articulating beliefs, clarifying visions, and claiming identity as a teacher educator, were outcomes of research—practice became a *pathway* for understanding who I became as a teacher educator.

Each memory reflection also surfaced for me salient aspects of my practice. I learned that teaching about teaching requires student teachers to engage and ‘buy in’ to the activity, such as the metaphor of renovating. For the FTTs, the metaphor needed to be useful for facilitating growth as teachers and I needed to connect that experience with what I was reading at the time, to make sense of it in so far as it allowed me to place myself in the shoes of the FTTs in writing the narrative journal. In the memory of circle

pedagogy, I reconceptualised practice as a circular connection between identity, action, thinking, being and learning and the continuity of experiences as having no definitive ends and beginnings. I learned that practice could be conceived as a *continuous thought* where the experience, in this case, the telling of the salmon story, cascaded into a series of connections to past practices allowing me to clarify them in new ways. The place-based experiences illustrated the value of *place as teacher* in terms of identity, by creating a visceral response in myself and in my student teachers—we learned by how we reacted, felt, and were moved by the dimensions of places we experienced, whether the sites of classrooms and schools or in the personal places of childhoods. The practices involved in transitioning from science student to science teacher educator focused on examining the NoS as a way to enhance and clarify my images of science. I recognized I needed to include epistemological investigations as part of my practices with prospective science teachers in order to foster the development of robust and accurate images of science as foundations for teaching science. From all of these experiences, it became clear to me that understanding practice was the foundation to self-understanding, both for me and for my student teachers.

5.2.4. Cycles of discordance as a conceptual framework

I conclude this section by offering the reader a conceptual framework for understanding self-study as a practice of learning from experience through a *cycle of discordance*. Pinnegar and Hamilton (2009) remind us that while “S-STTEP exists on shifting ground, it also leads to the development of powerful theories clothed in practice and told from the perspective of the practitioner” (p. 5, 2009). The recurring discordance evident in each of the memories was instrumental in my growth and transformation as a teacher educator. I learned new practices, I shifted perspectives, I grew in my vision to include aspects of education and schooling that I had not previously considered, and I negotiated my identity in the ebb and flow of thinking and action. This cycle of discordance reflected in my journey as a teacher educator became a heuristic through which I learned from my experiences—discordance not only existed as a quality of the memories I shared, it was the mechanism of learning from those memories.

The cycle of discordance as a framework encapsulates several key features of learning from experience: a) learning is propelled by discordance and dissonance by creating conditions for beliefs, preconceptions, assumptions and worldviews to be

challenged; b) the metaphor of a cycle implies that learning is continuous and involves points of intensity or activity where ‘something’ occurs to keep the cycle going forward; c) it allows for learning to be located and situated within experiences as sites for generating discordance; d) as a heuristic for learning from experience, it fits with the epistemology of experience presented at the outset of the thesis—experience has authority and therefore can produce valuable knowledge; and, e) learning from experience in the context of such discordance and dissonance is transformative—in terms of identity, practices and beliefs. Thus, as a conceptual framework emerging from this study, the cycle of discordance helps to stabilize the shifting ground of self-study to capture meaningful assertions and understandings from the dynamic contexts of teaching about teaching.

5.3. Part B) Implications for Teacher Educators

In this final section, I offer the reader several implications of the outcomes of this self-study. While the focus has been on my experiences as a teacher educator, the assertions for action and understanding are made public, a criterion of self-study research, and open for consideration in the wider field of teacher education. In presenting these implications, I contend that they must be contextualized within the milieu and parameters of the variety of programs and course designs that exist in teacher education, but may still be useful as *points of departure* for teacher educators to consider in terms of their practices.

5.3.1. Trusting discordance to facilitate learning

As I have asserted, the notion of discordance has factored significantly in my learning, growth and transformation as a teacher educator. What role, then, can discordance play in terms of course and program designs in teacher education? Teacher educators may consider designing learning experiences and activities where student teachers experience discordance in terms of ideas, preconceptions, beliefs, and worldviews as a persistent feature in learning from those experiences. Such a curriculum counteracts the imposed and propositional knowledge claims often associated with courses focused on developing skills and strategies. A curriculum informed by a cycle of discordance can potentially do exactly the opposite: expose tensions and chasms in the taken for granted assumptions of education, schooling, and pedagogical practices.

Teaching becomes viewed as problematic and calls on teacher educators and student teachers to construct knowledge about practice as opposed to uncritically adopting practices that they experienced as students themselves or that they observe in mentor teachers in practicum classrooms. A cycle of discordance also gives rise to the possibilities of innovation as student teachers and teacher educators generate *new* practices in re-orienting beliefs about education in response to discordance. The new practices potentially occupy a kind of third space (Bhabha, 1994) where they are open to negotiation and interrogation. This is particularly relevant given current curriculum reforms taking place in many jurisdictions—student teachers who are accustomed to learning and inventing practice are arguably better equipped to flourish in the flux of reform movements. Finally, trusting discordance as a heuristic for facilitating learning keeps the notion of being fully alive in the forefront of practice in teacher education. Teacher educators are ‘kept on their toes’ when unexpected and unfamiliar events permeate their experiences and arguably, they become effective models for their own student teachers of learning, growing and transforming through a cycle of discordance.

5.3.2. Defying patterns

I began this thesis by posing the problem of the “kaleidoscope of notions” (Wang et al., 2011), an array of pedagogical arrangements and course topics that make up teacher education practices and programs. As I think back to this initial problem, it becomes apparent that the self-study of my practices generated knowledge of practice and a conceptual framework that actually counteracts the aim of stabilizing the patterns. I posit that the assertions and understandings from this study resist the aim of creating pleasing patterns of courses and programs. On a broader level, self-study research situates learning from practice as unpredictable and intentionally situational in nature. The aims of this kind of research are to deepen and extend understanding about practice and share this knowledge publicly in order to keep teaching dynamic and vibrant such that the ‘bits’ are kept in motion. Thus, this research calls for greater *diversity* of practices and designs to inform teacher education in the context of continuing to interrogate and examine practice.

5.3.3. Responding to concerns in teacher education

The literature presented in Part 1 of Chapter 2 set the context of this self-study to be the concerns facing teacher educators and teacher education on a wider scale. The concerns included differences between teacher education programs and school based practicums, culturally responsive curriculum designs, and epistemological literacy in prospective science teachers and were presented as discords in the field of teacher education. While the outcomes of this self-study are self-focused, I suggest that the knowledge of practice and the heuristic of a cycle of discordance attempt to respond to a few of the issues discussed. Self-study and the reflexive and praxis-oriented nature of learning from experience demonstrated in this thesis may be helpful in mitigating the theory-practice chasm. In fact, as the nature of self-study is an ongoing cycle of relating self to knowledge and knowledge to self in the spirit of developing knowledge of practice, theory can be regarded as inseparable from practice—the chasm is only amplified when the self is not implicated in learning. The concerns of developing adequate culturally responsive teacher education may be addressed by the focus on learning that is contextualized and localized to the student teachers' life experiences. Through place-based pedagogies and metaphoric pedagogies, the possibility exists for student teachers to perceive the curriculum as centered on them, their life histories, places of learning and on their identities as burgeoning teachers. Epistemic pedagogies as an orientation is potentially informative to the development of epistemological literacy in the case of prospective science teachers. As my understanding of science was clarified through my experiences, I suggest that the same approaches can be beneficial to engaging prospective science teachers to deepen their knowledge and broaden their language in relation to teaching and learning science.

Of import is the contribution this self-study offers to the perceptions that teaching is simplistic or that becoming a teacher is partially achieved by observing good teachers. There have been consistent calls in the literature (Zeichner, 2005; Loughran, Hamilton, LaBoskey & Russell, 2004) to examine practices in order to reveal the complex and problematic nature of teaching about teaching and to surface knowledge that reflects the sophisticated activity of teacher educators. While self-study research by teacher educators has gained ground, the challenge remains to confront and deconstruct the simplistic understandings of teaching. I suggest the implications discussed and the knowledge of practice generated in this thesis may contribute to the discourses in support

of a pedagogy for teacher education (Bullock, 2009). At the very least, the implications provide language for understanding the tensions and exposing the structural intricacies of the discipline of teacher education.

Finally, the suggested implications are offered with the caveat that there are many other issues at play that contribute to the complexity of the concerns in the field. However, the pedagogical orientations presented in this chapter may be helpful to teacher educators who encounter and struggle with similar discords in the literature and in their practices.

5.3.4. Questions for further study

In closing, while the heuristic of a cycle of discordance and the assertions and understandings presented to the reader offer knowledge about practice for teacher educators in teacher education programs, these outcomes are certainly not considered comprehensive enough to apply to all contexts and situations. The wide range of teacher education configurations of practicum, courses, and programmatic designs requires researchers to focus on practices and experiences indigenous to their own contexts. Additionally, while there is variation in the field of self-study research along the continuum of self and practice (Kitchen, 2006; Bullock, 2014), I contend that this study attempted to find ground in both by analysing practices through which self-understanding was developed. Thus, in the spirit of valuing the process undertaken, I pose questions for consideration for *myself* with the intent that these questions may inform the work of other teacher educators exploring their own practices within particular contexts. How can the knowledge for practice learned from this study inform my future teaching? How can I better understand the impact of discordance on my student teachers' learning and on their emerging identities as professionals given what I know of its impact on me as a teacher educator? How can I utilize my growing knowledge about self-study as a form of research in the future? Given the depth of impact on my identity and practices as a teacher educator from self-study, how might student teachers take up elements of self-study as a practice in their development as prospective teachers? How can I openly model self-study as a practice with my student teachers and make this kind of learning from experience explicit in my practices?

5.4. Transitions

I conclude this final chapter poised for transitions to yet another set of memories in my journey as a teacher educator. While the research conducted in this thesis was “self-focused” (Berry, 2007), the outcomes offer a set of possibilities for the broader field of teacher education and for teacher educators in designing activities, experiences, courses, and programs. In keeping with the spirit of self in self-study research, I assert that inquiring into and learning from practice, *living through* experience, and developing knowledge of practice hold significant meaning as knowledge I take forward with me and offer for consideration to the reader. Examining my lived experiences as a teacher educator helped me understand, improve and enhance my practice. I have a clearer understanding of the complex and sophisticated nature of teaching about teaching and value the need for research to raise the status of teaching as a discipline. Thus, I invite the reader and other teacher educators for whom this work may hold meaning to examine *their* experiences, study the nuanced and seemingly infinite possibilities of living through and learning from their practices as bases for developing self-knowledge and knowledge of pedagogical orientations.

In addition, while the cycle of discordance was generated as a conceptual scheme from these memory reflections, other teacher educators may not necessarily develop the same or even a similar conceptual scheme. Instead, I contend that the process demonstrated in this thesis may serve as a model for examining experiences and generating conceptual knowledge. Regardless of how concepts are named or articulated, the point is that knowledge is generated that meets the aims of clarifying and improving understanding of practice and adding pedagogical knowledge to the discipline of teacher education.

In closing, I offer the following recommendations: a) View practice as fundamentally pedagogical in terms of developing understanding as a teacher educator and in adhering to the ultimate aim of teaching children and youth; b) Consider any inquiry into practice as theoretical and practice as theory-laden; c) Remain attentive to and skeptical of the imposition of theoretical frameworks as counter-productive to theorizing from practice; d) trust the authority of experience as a foundation for self-study research; and, e) accept that the knowledge that comes from studying experiences is important to share and make public in the interests of transforming teaching and learning.

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