The Nature of the Teacher Knowledge Constructed in a Multimodal Professional Learning Community

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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Abstract

This research explores the nature of teacher knowledge constructed over four years in a multimodal environment. Fourteen K-12 teachers, from Ontario, Canada and Michigan, USA, met online for two hours during a monthly research release day, participated in online chats, a forum site called Virtual Professional Learning Community, as well as participated in four three-day summer institutes. The teachers used these times to engage in knowledge building, creating research for their specific schools/classes in a recurring cycle of learning.

The data consist of multiple forms, including the online meetings, the forum, and the summer institute discussions. The research investigated what types of knowledge teachers developed and how those knowledges informed their professional learning. Grounded Theory informed the data gathering and an hermeneutical approach was used for the analyses. Three types of professional knowledge emerged, associated with the classical Aristotelian intellectual virtues: episteme, techne and phronesis. Teachers’ discourse revealed the complexity of their professional knowledge and the wide range of scope of their action — a finding that goes beyond many neoliberal conceptions of the profession. Findings provide ways to develop models of professional development with teachers leading to their sustained journey for meaningful professional learning.
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Chapter 1

Introduction: Situating the space for bringing teacher knowledge to the surface

Three vignettes

Vignette 1

Teaching is much more than just teaching. This is something I learned being a school teacher back in the nineties in Santiago, Chile. I was hired because I was a certified teacher, and also an “expert” in Literature and Linguistics, my 4.5 years licenciatura (BA) diploma in those fields supported a claim to expertise. Soon after my debut I came to clearly recognise that my prestigious background was not enough to face a classroom of 45 thirteen-year-old boys, all growing and developing at the rhythm of their hormones. For the sake of teaching in that context I was a complete illiterate. There was an enormous amount of information and local culture I did not have that made for one stumble after another, until I became used to the environment of that school. Finally, I gained the confidence that I was a quite possibly a fairly good teacher. The process of getting used to the school, of knowing its internal dynamics, and the different stakeholders, took me a while; yet, professional confidence and self-esteem grew. As time passed by, I was also convinced that I was able to be a good teacher with the support of my colleagues—and how they supported me! But one day I was sent to a capacitación, a professional development (PD) activity, in a University in Santiago. Together with some 200 other teachers from all over the city I was told to sit down in a large classroom. Far from my position, facing us, there he was, someone seated with a professorial attitude that very soon after his “buenos días”, good morning, started to lecture us about the metrics applied to the poetry of one of the major writers in Spanish literature, Federico García Lorca. More than two hours he lectured, non-stop, no questions, and no comments.

I felt stupid as I was not able to follow his ideas, and the topic seemed irrelevant to me. Although he used a microphone, the tone of his voice made it difficult to understand him; the way he read his notes did not help. I remember feeling hungry after the first half hour and grabbing pieces of a sandwich I had in my bag. I was definitively disrespectful when I started grading students’ tests or quizzes I always carried with me, as some other teachers started to do. This experience
unfortunately was not singular; rather, very few times in my professional teaching career did I experience anything different as Professional Development (PD).

Vignette 2

This is a more blurred memory. What is clear is the impact that made on me. In 2000, as a Master’s student at the Institute of Education, in London, UK, I was studying the effects of the OFSTED\(^1\) evaluation of teachers. I accessed to a newspaper article that reported a teacher who committed suicide by jumping from a bridge after she was graded below the minimum acceptable standard. She was a teacher working almost 30 years in primary schools. She could not cope with the evaluation results. I remember the article commented that she was poorly treated in her school because she lowered the averages of the centre. The note in the newspaper stated that she would have said that there was no recognition for what she knew and all of her work accomplished before, and that the evaluation standards for teaching were inaccurate and insufficient. She died a year or so before her retirement date.

Vignette 3

In 2009, I was appointed as Assistant Professor at Universidad de Chile, involved in teacher education. I became engaged with the idea that teachers should possess a specific corpus of knowledge on teaching that stretched beyond subject knowledge or content. Because I previously taught in schools, I knew that teaching was more than just teaching but uncertain of its implications. I made an appointment with a professor of a department of Philosophy I knew who worked in Philosophy of Science. I asked him about any ideas on Epistemology of Teaching, or Epistemology of Education. With an open laugh, (he laughed out loud!), and with an affected tone, he said to me, “My friend, teaching, pedagogy, as an activity lacks its proper knowledge. Education is knowledge-vacuum, it is fed by the disciplines and sciences”.

At that very moment I decided to start doctoral studies, and find out if I was right or if I was indeed wrong.

***

\(^1\) The Office for Standards in Education, Children’s Services and Skills, in the UK.
These three vignettes represent three different sources for my inquiry process: the profound disillusionment combined with the sensation of my intelligence being insulted and ignored; being infantilised by a colleague teaching me something I already knew; the sadness of knowing that a teacher took her life without being able to cope with the results of an evaluation system that did not consider her knowledge, nor her particular contexts and situations; and the lack of sensitivity and ignorance that some educated people can have about teaching and its meanders.

**Background of the study**

Using Olson and Bruner’s (1998) expression, I argue that folk assumptions concerning the nature of teachers’ knowledge are mediated by approaches that tend to locate teacher activity solely within the transmission of subject matter content, and further, that these mediations fuel hegemonic political discourse (Ravitch, 2013). Teaching is neither a simple nor easy activity (Engeström, 1987, 2001). Teacher professional knowledge consequently may include the local and personal wealth of data, wisdoms, skills, feelings and experience, together with the objective, observable, accountable facts.

Folk understandings of teaching drive the representations of the activity and shape the education of teachers. As professionalization processes are commonly tied to PD sessions (Borko, 2004), where the “one-shot-session” model predominates, very few chances exist for participants to contribute to shaping the methods and content of the learning they need to develop (Kooy, 2015; Ravitch, 2013). Moreover, they receive less opportunity to reflect on the nature of the knowledge required to master and succeed in their careers (Kooy, 2009).

According to my experience, and contrario sensu to my colleague in Chile, I believe that teacher knowledge has deep roots in foundational aspects of philosophy and curriculum studies. I seek to explore these roots as they form part of the conceptualization that underpins teachers’ practice, and teaching policies. By commission and omission, curriculum theories give support to policies that either sustain or undermine notions of teaching, learning and curriculum that affect teaching and learning.
Purpose and significance of the study

Teacher learning experiences include explicit Teacher Professional Knowledge (TPK), most corresponding to the data and skills teachers learn in formal settings, namely assessment skills, methodology of the teaching, subject matter knowledge, among others. Tacit knowledge needs more research. Indeed, most tacit forms of TPK focus on the teaching of core subject matter as skill, and drill, particularly as high-stakes standardised testing consistently drives school experience. Teaching and learning standards are imposed without consultation with teachers (Kooy, 2015; Ravitch, 2013). It remains critically important that relevant aspects of the experience of being a school teacher are under-valued (Highet, 1950) and inadequately provided for mainstream approaches to professional development.

The professional relationship to knowledge would consider at least that: a) teachers work within complex intersections with the written, hidden and lived curriculum (Apple, 1979); b) teachers continuously make ethical and moral decisions (Campbell, 2002), and c) teachers approach teaching and learning informed by their own representations of these activities. In light of these complexities it is apparent that the nature of the knowledge needed to become a self-sustained teacher, equipped to survive and prosper in an ever-changing challenging professional environment, is a subject worthy of focused research and conceptualization.

In this study, I argue that TPK actively draws upon teachers’ daily lived experiences and that such professional knowledge has been often ignored in teacher professional development. Additionally, teachers develop both complex explicit and tacit knowledge during their careers. They tend to underestimate the value of their own experience as relevant and pertinent professional knowledges, and that potentially hinders personal and professional growth and development.

Learning and knowledge as fundamental concepts in the study

As a second language user of English scholar, I have become aware that the term learning denotes both the process and the content of knowledge acquisition. Further, when teacher learning is discussed, the content of that process hide the kinds of knowledges teachers learn when they actually learn about teaching.
This may bring consequences of unveiling the problems related to teacher learning. Nonaka and Takeuchi (1995) introduced tacit knowledge as the kind of knowledge that helps in solving daily problems, often unspoken. Reflecting on the role played by tacit knowledge in the construction of professional knowledge, a great deal of what teachers bring together as accumulated professional knowledge is not necessarily obvious, pre-conceptualized, or a priori.

Learners need time for externalizing new learning (Vygotsky, 1978), which means that learners that actually have learnt must be able to provide evidence of what was learnt. The notion that education equals teaching/learning as a consolidated cause/consequence activity, suggesting that everything taught is learnt, has not helped with clarifying notions of teaching and learning as complex activities. As learners, teachers need time to process and establish new knowledge in order to bring it from the “not known/not spoken” area, or from tacitness into areas of explicitness and public use. That process, however incomplete, will shape the daily decision-making of teachers as a means of producing an impact on students’ learning and on teaching.

Teachers’ decisions are informed by areas of knowledge that remain under investigated compared, for instance, with aspects of pedagogic content knowledge (PCK) (Shulman, 1986). This research considers teachers producing a broader knowledge, and on exploring the knowledge teachers produce and whether this shapes their decisions and guides their professional development as teachers. The characteristic of these areas of knowledge should represent much of the teaching not related to subject matter. These are the value-laden aspects of teaching.

The knowing of both tacit and explicit TPK together with teacher-led learning may reposition professional development towards a more bottom-up approach of how teachers learn. Moreover, this could inform policy and help program developers enrich their understanding of teachers’ work and take action to implement new teacher directed approaches. Finally, it may contribute to the discussion of certain questions about the purpose of formal education by: a) emphasizing the importance of sociocultural approaches to human development; b) highlighting the role of school education in the construction of culture; and, c) developing more nuanced perceptions of schooling.

***
This research emerged from the SSHRC funded research project, entitled “Teacher Learning that Matters: Expanding a Longitudinal Study into a Technology-Mediated Professional Community”, (Kooy, 2011-2015). In her research, Kooy investigates “how professional learning communities (PLCs) develop and provide the intellectual, social and material resources for teacher learning and innovation leading to pedagogical practices that improve student learning” (Kooy, 2010, p. 4). Her investigation reveals that self-directed teacher learning provide means to generate complex understandings of teacher profession, and that socially constructed approaches to teacher inquiries help in renovating notions about the teaching activity.

To pursue my inquiry, I employ a qualitative methodology using hermeneutics and discourse analysis to examine the discourse of 16 K-12 teachers, participating in Kooy’s research, from different educational contexts (Ontario and Michigan schools). The teachers interacted in a research based, multimodal Professional Learning Community (PLC) through monthly release days for school-based research, that included two-hour online meetings, along with a chat room; three-day face-to-face summer institutes; and a virtual professional learning community forum that served as a repository for teacher research, questions, resources, and conversations.

Following an initial review of the data, the inquiry addressed underlying questions about teachers and teaching within the PLC: The process of professional knowledge construction; the importance of understanding this process; the role of teachers working together, and; the situated nature of teacher professional development.

The research questions

This study addresses the problem of the nature of the knowledge teachers develop in a PLC based upon two questions as follows:

1. What types of knowledge do participating teachers co-construct over their participation in this PLC?
2. How can the types of knowledge of participating teachers inform professional teacher learning?
Organization of this dissertation

This first chapter provides an introduction where I present the problem, its context and background and introduce the research study and the research questions. Chapter 2 is a literature review where I theoretically locate the problem of this study. Chapter 3 addresses the methodological approach that forms the foundation of my inquiry. In chapter 4, I analyse the findings and include a discussion of the implications of my inquiry. Chapter 5 presents the final discussion of this dissertation, the significance of the study and its implications. As Appendices, I added the poetry I wrote during my research period. In a coursework with Dr. John Wallace, I found that poetry would be a way of representing my findings. Thus, poetry became part of my field journal, capturing teachers’ voices in diverse ways, however sincere in the purpose of recognising their voices as legitimate, worth of a second thought. Such poetry, in this context, remain as the “informants” voices. I have found poetry there; its echoes have nurtured this research.
Chapter 2: Literature review

Teacher professional learning and teacher professional knowledge

This chapter provides the conceptual foundations for this dissertation by examining several concepts that lie within the field of curriculum studies, and how most teacher professional knowledge (TPK) constructions are embedded within them. In this chapter, I review mainstream notions of curriculum that predominate and discuss how, through an evolution during the span of eighty years, they remain centered in so called objectivistic approaches that focus on specific perspectives of TPK. This discussion proceeds in four parts: a) Teachers’ learning and teachers’ knowledge; b) Knowledge for teachers: the transmissible truth c) Learning and knowledge in the curriculum studies field, and; d) Professional development and teacher learning through dialogue.

Teacher learning and teacher professional knowledge

The responsibility for the transmission of culture has been set on teachers’ shoulders, most especially in their role as knowledge bearers (Elnadi & Rifaat, 1992). However, there is still a lack of recognition of teachers as intellectuals or even as knowledgeable experts. In school settings, the transmission of culture can be seen as a common and simple action where cultural knowledge content moves linearly from a written official publication to students’ minds. Done effectively, this rather unsophisticated knowledge-transmission process is generally promoted as what teachers need to be able to do to be considered expert practitioners.

Standardised procedures help to reinforce the primacy of this one-way model (Borko, 2004; Ravitch, 2013), as test results are used to define the quality of teaching and the quality of learning. Teacher practice, however, consists of many more activities than just teaching subject matter. Indeed, dealing with issues of ethics and morals, or managing a classroom with broad sociocultural makeup, is intrinsic to the daily work life of any teacher operating at any level of the system (Campbell, 2003; Carr & Skinner, 2009). Yet, ethical aspects of teaching or managing diversity in classrooms do not seem to be commonly considered as a part of teacher professional knowledge, when it is necessary to evaluate teachers’ performances.
At the same time, the term *learning* does not satisfy the limits of accepted categories since it does not clearly distinguish between the process of learning itself and the content of what is learned (Avis, 1986; Hawkins, 1990). The issue becomes even more complex when considering the problem of *teacher* learning. In effect, teachers do learn but, what do they learn? What is the core of their learning? Can teachers learn more effectively, for instance, in a community or other similar social space for learning?

**Knowledge for teachers: The transmissible truth**

For many, curriculum has remained associated with positivistic, scientific, and technological approaches to education and teaching dating back to the 19th century. The traditional perspective of curriculum (Pinar, 1988), considered knowledge taught in schools as a fixed and measurable truth, or as Apple claims, a “truth-until-further-notice” (Apple, 1979. p.100). Knowledge in the traditional sense, is sequentially ordered: from the literal and simple to the difficult and complex; from what is concrete to what is abstract. Such knowledge is taught through a taxonomy that orders, differentiates and selects atomized bits and aspects of culture to be transmitted to the next generations. The traditional approach to teaching tends to predict *ex ante* a process that, if well planned, happens in a predetermined manner (e.g. Bloom, 1956; Bobbit, 1924; Schwab, 1973; Tyler, 1957). Teachers’ roles in this context are part of the efficient mechanism for social schooling (Sheppard, 2000).

Curriculum has often been understood, therefore, as top-down documents, and its design a matter of expertise coming externally, from beyond the teachers and the school. Notwithstanding the major advancements in neurology and human sciences in understanding how humans learn and build culture, traditional approaches to curriculum often feed a system that does not want to let go of long established epistemic traditions wherein students’ minds are repositories for depositing information and for pouring knowledge into them. And then, much like their students, when teachers become learners, as in many traditional PD settings, they are often perceived as repositories. Freire (1997) states:

> Instead of communicating, the teacher issues communiqués and makes deposits which the students patiently receive, memorize, and repeat. This is the “banking” concept of education, in which the scope of the action allowed to students extends only as far as receiving, filing, and storing the deposits … it is the men [sic] themselves who are filed
away through the lack of creativity, transformation, and knowledge in this (at best) misguided system (p. 53).

Forms of testing provide follow up the “depositing” action and provides a corollary to check what was deposited. This measuring of human behaviour normally occurs in an environment (e.g. a large quiet room with separated rows of chairs and desks, a big clock hanging on the wall, pencils and erasers, and nervous pupils’ perspiration) that is designed to facilitate the depositing action and to steer the learning process away from more complex considerations, such as the relevance learning has to the school experience.

While education systems continue to use schooling (and curriculum) as a tool for reproduction and social control (Bernstein, 1973) through homogeneous approaches to classroom teaching (hooks, 1994), diversity in schools continues to increase. This becomes clear in many developed and developing countries where secondary education is no longer reserved for the privileged, as it was in the beginning of the 20th century. In many countries, mandatory and universal access to education today means diversity in classrooms with all the accompanying complexity that makes notions like the positivistic order and progress, associated to conceptions of curriculum extremely untenable in a world that no longer accepts pre-established truths (Castells, 2000; hooks, 2003).

Learning and knowledge in the broader curriculum studies field
Yet, curriculum can be better understood as experience from the ground up, a “phenomenon” (Pinar, 2008). Curriculum becomes the primary field in the study of education, its origin is rooted in the classroom, in the educational setting. As a locally-situated phenomenon, curriculum is political (Freire, 1997; Giroux, 1988; hooks, 1994). Indeed, it evolves as something belonging to the personal sphere, almost autobiographical, and clearly subjective (Greene, 1975). Grumet sheds light on this point:

Curriculum theory seeks to restore the contemplative moment in which we interrupt our taken-for-granted understandings of our work and ask again the basic questions practical activity silences. In creating and maintaining contradictions between theory and practice, we can reconceptualize the relation between these two domains (Grumet, 1989, p.13).
Curriculum can be seen, therefore, as a matter of personal and collective human activity, recognizing the utilitarian (Greene, 1975), the subjectivity and the timelessness in its development.

While curriculum tied to content-as-truth remains hegemonic, alternative stances are being proposed. Grumet (1989) and Pinar (2008) built on frameworks beyond positivism and behaviourism, using human discourses to create a richer field of analysis. These experiences benefit educational stakeholders in making sense of education not only as a human right but also a humanizing activity. This position challenges precepts originating in the neoliberal, free-market economy in which education is considered to be a commodity, subject to supply and demand (Ball, 2012; Lauder, 1999; Ravitch, 2013).

Alternatively, education becomes a social activity which reflects and tackles communities’ needs for learning and hopes of liberation and transformation (Apple, 1979; Freire, 1997; Giroux, 1988; hooks, 1994). In this model, the outcome of schooling might be defined as more than student academic results/scores—stronger citizenship and social commitment, including a more clearly articulated quest for happiness and personal and social fulfillment. Indeed, most school systems seek the development of individual and collective virtues to promote better citizens and democratic problem solvers.

Curriculum, currere and consciousness.

The word ‘curriculum’ has its roots in the infinitive form of the Latin verb currere (to run) and the suffix culum, (meaning which makes to or which serves for) (White, 1858). Curriculum, therefore, etymologically means “that which serves for running”. It involves a reference to the track where a race is run or the devices used for such a race. It is a notion that has been present in the literature for more than one hundred years (Grumet, 1989), one of running a race with purpose. This reference underlies both traditional theories and theories of reconceptualization (Grumet, 1989; Flinders, Noddings & Thronton, 1986).

What is the race? Where is this currere enacted? Pinar (2008) applies the term in the teaching context, as a teacher’s reflective process of realization, of professional awareness with the purpose of professional development through the enhancement of consciousness. Currere, according to Pinar (1975), is both regressive in mood and progressive in aims: it reveals and
makes sense of decisions made, and at the same time contributes to making informed decisions that affect professional experience and students’ learning environments.

When consciousness/awareness informs professional reflection, the problem becomes not only describing what teachers actually do in the classroom, but determining the purpose of their actions. In this light, one purpose of teaching is the knowing and sharing of the cultural artifacts (physical or intellectual artifacts) that take primacy in the classroom. Consciousness allows teachers to be self-aware and reflect on how their life histories, experiences, and representations affect their perspectives, their teaching, and ultimately their students. A teacher who possesses an active inner life, an inner dialogue (Palmer, 1998), can engage in a transformative reflective activity. Processes of awareness acquisition, in this context, situate teachers alongside their taken-for-granted-understandings, evaluating how they sustain those representations. Moreover, they illuminate how those representations may or may not contradict liberating purposes in education (Freire, 1994, 1997) if it is conceded that education is undertaken for the purpose of liberation. Consciousness is at the core of informed decisions that reveal what is believed, what is hoped, what is chosen. It broadens the scope of the public’s education from learning the so-called truth written in books and uncontested traditions, addressing intellectual development and cultural transformation. Currere, broadly understood as a professional awareness process, helps to expose the liminal spaces in teachers’ work that still need to be observed and understood.

Enhancing and promoting teacher awareness and reflection, encouraging the expression of the inner-self and inner-dialogue, offer a chance for substantial change and improvement (Greene, 1975; Pinar, 1976). However, the concept of change for many still means predictable and measurable behaviour change as the basis for teacher professional development activities (Opfer & Peddler, 2011). Neoliberal approaches to education endorse the factory model of human activity, a production line with measurable standards, and homogeneous in-series outcomes (Sheppard, 2000). Pinar (2012) and Ravitch (2013) claim that this economic/political point of view has de-professionalized teaching. I would say this perspective has furthered the mechanization of teacher work, reducing teaching to a function of a group of techniques and methodologies to be applied.
The tendency to treat the school as factory (Sheppard, 2000) leads teachers to believe they need to solve their issues in isolation, individually, and sets up competition with their colleagues. This dynamic is reinforced by policies like “awarding the teacher of the year” based on external standardized evaluations results with little probability that only one teacher deserved recognition for producing learning and achievements in students. Instead, teaching can be more purposefully conceptualized as art, techne in Aristotle’s (2011) terms. From this conceptualisation, teaching becomes an art where products of learning are co-created by a guild of workers of culture, workers of imagination, workers of knowledge. Yet, in spite of the marketing model of education, teachers tend to lean on other teachers as resources to make their decisions and forge their way through the complex construction of learning (Kooy, 2009).

Techniques and experiences themselves do not change the status quo (Dewey, 1938; Kolb, 1984). For change to occur, educational activities need to be sense-making and meaningful, which happen when a community makes a connection between the activity performed and the satisfaction of their needs (Engeström, 1987). Such needs-satisfaction in many cases involve the need for liberation (Freire, 1997, hooks, 1994). Without a connection or meaning, curriculum becomes a barrier to liberation. The change process is not only about “practical” liberation from oppression, but also the process of hoping and searching for the classical quest of beauty, goodness, and truth. Freire (1994) noted:

I still have in my memory today, as fresh as ever, snatches of discourses by peasants and expressions of their legitimate desires for the betterment of their world, for a finer, less ugly world, a world whose “edges” would be less “rough” in which it would be possible to love. (p. 40)

The possibilities created by the act of seeking such type of change open a whole new aspect of curriculum studies involving hope as a source of curriculum change.

Hope is situated in time and place. Freire (1994) highlighted the need for a curriculum maker to know the people, where they live and work, where they belong with the aim to make the work of curriculum meaningful. “Dr. Paulo, sir -- do you know where people live? Have you ever been in any of our houses, sir?” (p. 24). The peasant who asks Freire such question suggests a curriculum

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2 The classical Greek transcendentals assimilated respectively to the arts, the morals and the intellect.
that might start to fulfill people’s needs: from the bottom up, where professional power needs to alter.

When a teacher knows her students—where they live, what and when they eat, their notions of authority, or how they were raised (López & Tedesco, 2002), she engages with a special knowledge that affects her professional practice. This suggests that we should always ask learners what they know and need, and use the knowledge to build learning. Teacher learning and professional knowledge construction require questions emerging from the teachers if authentic professional learning and professional knowledge production is to occur (Kooy & Colarusso, 2012).

hooks (1994) states that increasing attention to theory causes curriculum to become a real problem to solve; curriculum should not be comprised of facts to be taught in a specific period of time, but rather, should be a challenge, a site of struggle for teachers and educators. In teacher work, the problem should be how to make knowledge accessible to populations for whom this such knowledge has been denied as a result of the commodification of education.

**Teacher knowledge building in dialogical context**

Teacher knowledge, complex and multifaceted, is difficult to contain within one overarching theory or framework (Fenstermacher, 1994; Gambhir, Broad, Evans & Gaskell, 2008). Understanding and conceptualizing teacher knowledge requires considering multiple theoretical frameworks. Each theoretical framework support a clarity required for achieving a more complex, layered comprehension of teacher knowledge and related activities of ongoing professional learning. For instance, according to hooks (1994) feminist theories of curriculum help in the reconciliation of areas of knowledge that have traditionally seen unconnected, such as the private and the public spheres of education with the deductive-inductive perspectives of it, and with the intuitive and even spiritual stances of understanding. This reconciliation of different spheres enriches theoretical analysis and augments our understanding of human identities by contributing to the process of consciousness acquisition (DuBois, 1903; Freire, 1997).

Chalmers (1976) noted one important function of theoretical frameworks in research is their role in guiding observation. Well-defined theoretical frames reach into all aspects of any given
research process from the questions asked, the methods and data selected, and the interpretations of results (Mishra & Koehler, 2006).

Vygotsky’s (1978) theory of human development offers one such guiding theoretical framework for investigating learning as an active, sustained, and social process. Vygotsky argues that through social activity, people access new knowledge and experiences that, if properly mediated, are integrated into the learner’s cognitive structure. The knower gains new understandings of a situation or problematic issue (Kooy & Colarusso, 2012). Teachers, in acts of speech (Austin, 1962; Searle, 1969), use dialogue as a tool to generate their growth and development and as a means of mediation to facilitate professional discussion (Bakhtin, 1992).

Davydov (1999) and Engeström (1987, 2001) suggest that the production of any cultural object (e.g. new knowledge) requires that a number of concurrent conditions and stakeholders participate in an activity. These actions “are always, explicitly or implicitly, characterized by ambiguity, surprise, interpretation, sense making and potential for change” (Engeström 2001, p.134). Through collective and collaborative work, especially in learning communities, teachers can direct, create knowledge and distribute labour (Engeström, 2001). This learning is situated (Edmons-Cady & Sosulski, 2012; Lave & Wenger, 1991) and contextualized through explicit rationale of transforming both the mode and purposes of teachers’ work.

Complexities of teacher knowledge are revealed in the contexts where constantly changing environments challenge the ways teacher knowledge is developed and applied. The lived realities for teachers establish a self-directed approach to learning, where their ongoing inquiry includes the varying environments in which they function day-to-day: constantly changing student groups; working with new or reformed/amended curriculum and new educational policies; continuing standardized testing; and, pressure to adapt to change in administration and teacher roles. The always evolving circumstances, the permanent nature of change may make it difficult to get a fixed read on the nature of teacher knowledge.

Discussing the nature of knowledge, Aristotle (2011) draws distinctions among what Flyvbjerg (2001) called the three virtues of the intellect: episteme, defined per se as intellectual, theoretical knowledge, obtained through the reflection and contemplation of reality; techne as practical knowledge, the art, related to the way things work and are crafted; and phronesis, which relates
to the prudence and wisdom, the ethical and moral knowledge. In teacher education, *episteme* and *techne* form key parts of the substance of the different approaches to what theory and practice of teaching and learning may mean in different conceptual settings. However, *phronesis* has become part of what teachers need to learn on site, usually regarded as “emergent knowledge”.

Studies on emergent knowledge tend to focus on the visible aspects of knowing. For instance, Lundvall and Johnson (1994) found that knowledge can be divided into four categories: “know-what” (the content), “know-why” (the causes), “know-how” (the way to produce), and “know-who” (the community that knows). As an aggregate of these two perspectives, I would suggest the inclusion of a “know-what-for” category. In so doing, the moral/ethical side of the activity is added to the quest for understanding the ultimate purpose, the aim of an activity. In teaching, *phronesis* focuses on the social purpose of teaching and pedagogy.

The moral influence on education is necessarily linked to actions and decisions. Lejeune (2011), suggests that *phronesis* in teaching relates to tacit, unexpressed knowledge that informs approaches to problem solving and unpredictable situations using professional wisdom. This aspect of TPK hard to define, relates to the imprecise, complex category of intuition (Polanyi, 1966). Bereiter (1985) proposes that professional wisdom also relates to mastering intellectual tools and using knowledge critically and creatively, aspects of the teaching profession which, arguably, represent a core function of professional knowledge. However, this potentially useful domain is ignored in dominant approaches to teacher professional development.

**Professional Development and teacher learning through dialogue**

Ample literature addresses the problems with in-service teacher education (in the form of PD) to provide effective teachers (Avalos, 2009; Borko, 2004; Darling-Hammond, 2012; Darling-Hammond, Wei, Andree & Orphanos, 2009; Opfer & Pedder, 2011; Whitty, 1998). Teachers considered to be poorly trained, have also been blamed for poor test results under neoliberal approaches to education that have dominated since the 1990s and continue to dominate today. Fullan’s (1993) description may help in framing the background of the general lack of satisfaction with teachers and teaching:
We don’t have a learning profession. Teachers and teacher educators do not know enough about subject matter, they don’t know enough about how to teach, and they don’t know enough about how to understand and influence the conditions around them. Above all, teacher education --from initial preparation to the end of the career-- is not geared towards continuous learning (p. 108).

For decades, teachers have been almost invisible as decision makers (Kooy, 2015) when PD is externally mandated and assigned (Edelfeld, 1977). Teacher perspectives remain under-investigated: how teachers view the role of PD in their own development, how they perceive such process, and what changes they might recommend in PD practices (Christensen & Turner, 2014). Their input would provide invaluable insight toward implementing new approaches that make use of their own knowledge in the development process (Mumford, Fiala & Daulton, 2017; Webster-Wright, 2009). The purpose of sustained professional teacher learning should be based primarily on teachers’ self-identified needs and their shared concepts of PD (Borko, 2004). PD designed and implemented from teachers’ professional needs and interests would likely begin a process of transformation in continuing education (Christensen & Turner, 2014) and would move us towards retrieving the meaning of the concept professional development.

Communities of learning as dialogical spaces for knowledge construction

At least 80 years of robust human development and curriculum studies by scholars from diverse backgrounds claim that knowledge is constructed socially (Berger & Luckmann, 1967; Bernstein, 1973; Davydov, 1999; Dewey, 1938; Engeström, 1987; Freire, 1997; Lave & Wenger, 1991; Vygotsky, 1978). This socially-constructed knowledge cannot be contemplated without considering the nature of dialogically constructed learning (Bakhtin, 1992; Van Dijk, 2008), “around the here of my body and the now of my present” (Berger & Luckmann, 1967, p. 22).

The dialogical and social aspect of teacher learning is at the centre of change processes in classrooms and in schools. Change is a driving force in education. It is intimately linked to the concept of learning, as transformation of culture and its practices, and transformation of minds through the development of progressively complex discourses; in the case of this inquiry, about teaching. In professional learning, the change occurs in the time and space where teachers meet together (Darling Hammond, 2014), in spaces of trust (Vanblaere & Devos, 2016), where they can express their concerns, and identify the contradictions of their practices (Engeström, 2001).
Teacher learning communities, as spaces of professional learning, challenge the traditional forms of PD, those “one-shot” in-service programs, top-down mandated, most often imposed upon educators (Clandinin & Connelly, 1999; Cochran-Smith & Lytle, 2004; Kooy & Colarusso, 2012). This standard format makes it difficult to create permanent change in teachers’ beliefs and learning (Borko, 2004). Teacher learning communities are conducive to richer teacher professional development as they capture teachers’ lived experiences by being grass-roots, situated in shared practices, allowing for the creation and distribution of professional knowledge.

A growing body of literature and related practices describe the learning community as a space where better professional learning can take place (Chapman, Ramondt & Smiley, 2005; Cochran-Smith & Lytle, 1999; Kooy, 2009) and where alternatives to mainstream PD can be teacher-led and constructed (Greene, 2000; Nehringa & Fitzsimons, 2011). Teachers enhance their classroom performance through collegial mutual support (Hargreaves, 2000), “learning about teaching from inside out” (Booth, 1996, p. 200). Paraphrasing Scardamalia & Bereiter (2006), a professional community of learning would be a space where it is possible for teachers to treat and be treated as knowledge workers.

**Conclusion**

This study interrogates the nature of knowledge development within a teachers’ learning community. For this purpose, I reviewed the main arguments that sustain relevant positions on knowledge and learning that walk the paths of education in general, and teaching in particular.

Although learning is committed to making change possible, the evidence of such learning is complex and diverse. Knowledge goes beyond the mere established truths to be repeated. Rather, it is the recognition of the concepts a teacher may use to make decisions and operate within the school system.

To build awareness, the socially constructed knowledge approach to learning appears appropriate. Theorists as Vygotsky, Bakhtin, and Freire among others, argue that only through the other, the mediator or the interlocutor, it is possible to create a representation of the self. It is the self with the others, in a situated way, which may allow for the emergence of professional awareness. Such awareness processes must be intentional; they do not occur spontaneously. Specific strategies like currere, for instance, allow teachers to gain understanding of building
more critical awareness through the personal and collective discussions. At the same time, renewed awareness becomes a springboard for teachers to initiate professional self-consciousness and perspectives on teaching. Teachers working together take advantage of inherent resources associated with dialogue that may transform a group into a community that may lead to actual professional development.

In the next chapter, I describe the methodology of my inquiry. Here teachers’ voices, as dialogue producers, are presented as intellectual tools, ready to be used for analysis to further understanding of teacher knowledge.
Chapter 3: Methodology

Exploring teachers’ voices for unveiling professional knowledge

In this study, I investigate one overarching issue: the nature of teacher professional knowledge (TPK) co-created in a professional learning community. I describe and analyse TPK in a way that challenges the general conception of teachers’ paucity of such knowledge, inside and outside of classrooms for effective student learning and achievement. For this purpose, I address two research questions: What types of knowledge do participating teachers co-construct over their participation in this PLC? and How can the types of knowledge of participating teachers inform professional teacher learning?

In this chapter I describe the methodology that supports the investigation of my questions, the process of the study and my role in it. I also describe the participant teachers in this research, and my data collection and analysis techniques.

Methodology: An Interpretive approach to teachers’ dialogues

Generating understanding of participating teachers’ TPK co-constructed through dialogue, that reveal their core of beliefs and representations of their practice constitute a subjacent goal of this research. This does not seek to generalize because it is based upon specific teacher experiences. Yet, I seek to provide insights into the pattern of the experiences lived within a professional and dialogical community.

Hermeneutics of narratives act upon the process of understanding, mediated by the circumstances, and mediated by the language, or its historicity (Brockmeier & Meretoja, 2014; Ricoeur, 1992). As such, every interpretation is singular, submitting to the permanent flux between acts and the interpreter experiences from which acts are interpreted, understanding the setting as a “slice of life” (Guba 1981, p. 85).

The role of the researcher within a research paradigm as I have described above, is one that may be described as grounded, as I build a theory close to the process of phenomenon developing, making sense of it by displaying its various pieces, as a quilt maker (hooks, 1991). Conducting research under this perspective needs to consider a “to-know-a-city-is-to-know-its-streets
approach to things” (Geertz, 1983, p. 167). In my study the streets of the teachers’ knowledge-city are the teachers’ discourses, their dialogues and acts of speech (Austin, 1962; Searle, 1969) produced within the conversation about their work, as well as my own experience as a teacher. From this activity, the quilt is made to generate an understanding of teachers’ speech, and also the underlying representations of their work and the knowledges involved in it.

Representing the perceived reality through teachers’ professional dialogue poses the question about how this activity constitutes what Denzin and Lincoln (2000) call “sacred textuality” (p.3), thereby situating this inquiry within those works that seek the development of a theoretical discourse of teaching. At this point, I need to express a necessary digression in order to set the nature of this methodological approach: the expression sacred textuality suggests in me the work of the Muses, that in the Greek mythology are daughters of Zeus (θεός, Theos = the sacred, the divine). This suggests that the multimodal expressions of the reality, and of ways of accessing to it, would lie underneath the surface of daily actions. Indeed, through means that include rationalist induction and deduction, as well as intuition as a source of knowing, teachers discourse as sacred textuality may recall teachers’ work within the scope of a holy activity whose speech would help in the deliverance of the other (from ignorance, for example).

I seek to “uncover the conceptual structures that inform the subjects’ actions” (Denzin, 2001, p. 117). In fact, through contesting other traditions of analysis (e.g. positivism) and using the human word as sacred subject, interpretation and hermeneutics seek to elaborate alternative perspectives of social phenomena (Brockmeier & Meretoja, 2014). In terms of the methodology, I suggest that these new perspectives consist per se in a theory, understanding the expression theory as contemplation of the divine, if, again, I am allowed to go back to the etymology of the word. In my research, a fundamental activity consists in contemplating the word and the voice of participant teachers.

By representing reality and showing explicit forms as well as more tacit representations, leaves some room for innovation. In my understanding, innovation is the end purpose of a disciplined inquiry (Guba & Lincoln, 1989). For the teaching profession, dialogical and collaborative learning spaces become a favourable environment for meaningful application of research
findings as they are connected to a quotidian reality and examined through a phenomenological approach to this reality (Engeström, 2008).

Inquiry of teacher knowledge.

Grounded Theory (Geertz, 1973; Glasser & Strauss, 1967) and Discourse Analysis with interpretive purposes (Van Dijk, 2008) allow for the identification of key themes in teachers’ dialogues, and their construction of professional knowledge. Gadamer (2004) suggests that the experience of a natural conversation follows symbolically a question and answer metaphor, which would provide, in my research, an understanding of naturally flowing teacher conversations. This is opposed to top-down mandated interactions with an expected outcome; rather, it is centred on generating local knowledge, highlighting the gap between the hegemonic discourse about TPK and teachers’ situated/lived experiences. I aim to provide a methodological framework to develop a deeper understanding of teachers’ voices, regarding the knowledge they represent and enact in their work.

The collected data were analyzed in a contextualized approach (DeRose, 1992), using thick description (Geertz, 1973). As an informed subjective researcher, I interpret what is available through the lenses of my own experiences (Ricoeur, 1981; Brown & Jule, 1983; Denzin & Lincoln, 2005). Discourse is understandable not because it is comprised of syntax and lexicon, but for the meanings embedded in the discursive constructions (Brown & Yule, 1983; Sebohm, 2004). This perspective would help me to grasp the nature and scope of teacher knowledge. If I want to construct the reality lived by teachers through their discourse, I must be rooted in the language of daily life, particularly when I attempt to interpret the meanings that inhabit that discourse (Berger & Luckman, 1967). As a researcher, I am involved in a hermeneutic activity when I read and decode teachers’ discourse. Furthermore, two aspects are relevant in this interpretive process: (a) as part of the wider community of teachers, my own experience as a teacher becomes part of the process in interpreting the teacher discourse; (b) my understanding of the language used by teachers is affected, as English is not my own language: I interpret their speech, willingly or not, using codes and signs that I have mastered before I used English language as a research medium.
The construction of reality is an activity in constant progression (Berger & Luckman, 1967). It also involves putting pieces of the perceived world together like a *bricoleur* (Denzin & Lincoln, 2000; hooks, 1994). When the inquirer reconstructs the reality, he is obliged to reveal that which is discovered, and such discovery would change lives for the better. Or, in the case of educational qualitative research, would change the professional lives of teachers, the lives of their students and that of the researcher (Eisner, 1988).

The construction of reality, as in every learning activity, implies change. The common criticism is that most research on education does not go beyond the walls of academia, it does not travel into classrooms. Instead, it seems to serve as a sort of endogamous game played for the sake of knowledge *eo ipso*, as its own independent variable. In my experience this claim seems to be true. This hidden purpose of academic research leads to a basic problem of how to make research findings meaningful and purposeful to teachers so that change is actualized. I would suggest that the concept of research-based, accumulated, educational knowledge that comes from academic researchers, working night and day for funding and findings, may become extraneous if it is accumulated and even published, but not used. Educational research that does not interact with the educational community is like a letter never posted. It does not produce the change needed to construct new and better realities. My hope is that this research, honouring teachers’ sacred voices, may go back to them and act as a tool for further discussions and change.

In a context of multimodality in expressions and resources, in an environment where teacher thinking was complex, I decided to use a qualitative approach to the analysis of the data already collected. Given the nature of the questions and my profound respect for teachers’ voices, I focused on the discourse and context of professional learning in this community. Hence, my study seeks to understand what teachers know when they gather in such environments. That process for understanding may act as an explanatory tool for understanding and making sense of such phenomenon, the construction of the teacher’s professional knowledge that happens in historical terms. It is a phenomenon that happens in specific times and places (Ricoeur, 1992). This understanding of teachers’ knowing is an opportunity for bringing together a series of interconnected ideas and abstract constructs to make sense of other particular phenomena in broader contexts (Wildy & Wallace, 1995). In my inquiry, theory acts as the foundation for building my own perspective (hooks, 1991).
I endeavour to use qualitative research methodologies that consider the voices of teachers in grounded ways (Gee, 2005). I focus on teachers’ written and orally-produced texts, which allows for a nuanced and thicker approach than traditional top down approaches to human studies (Denzin & Lincoln, 2000; Geertz, 1973). To create meaning with phenomena requires various means such as: (a) interacting within environments determined mainly by language; (b) recognising senses and emotions; (c) using intuition as a way of knowing, and; (d) examining traditional rational approaches to reality, namely inductive/deductive methods. Within qualitative methodology, the approach to reality depends on local knowledge (Geertz, 1983); it is phenomenological as it intends to discern themes and “uniquenesses”, as well as hermeneutic-interpretative because it looks for making sense of those events (Miles & Huberman, 1994).

The process of the study

After two consecutive research processes studying teachers’ reconstruction teaching and learning, through the development of book clubs (Kooy, 2000-2004), and the teacher development in communities of learning in and out schools (Kooy, 2006-2010), Kooy (2011-2015) initiated the SSHRC funded longitudinal research “Teacher Learning that Matters: Expanding a Longitudinal Study into a Technology-Mediated Professional Community”, where she pursued the study of what happens when teachers have time and appropriate resources to generate and sustain their own professional discussions and locally based research.

Teachers were invited by Dr. Kooy in two consecutive cohorts to participate in the new research, as they directly or indirectly knew each other from before: they either had participated in Kooy’s previous research, or have been her graduate students at OISE, and some in cohort 2 were referred by colleagues that were participating in the cohort 1. Those teachers represented the whole spectrum of schooling: elementary, junior school, and high school. All the teachers in this study were well established, English speaking, female, with at least five years of teaching experience, from Ontario, in Canada, and Michigan, in the US. In each cohort, initially there were nine teachers. While the process advanced, in the year 2013-2014, the teachers asked to blend into a single cohort, as, they had the experience of gathering in summer institutes and they created personal and professional bonds. However, four teachers needed to leave the group for various reasons, and the final count was 14 teachers. According to the larger study’s design, the
data associated to teachers that no longer participated in the process would not be part of the data to be analysed.

Teachers were paid by the project for a monthly release-day from school to prepare for the online meeting and to participate in their own locally-developed research. Having a day-off allowed teachers to read and search for literature according to their research and intellectual needs, allowed them to work on their research, and for some to even attend conferences or seminars where they would nurture their own educational interests. A paid day-off was understood as a luxury by most teachers, that were eager to have such privilege. It was expected from teachers to arrive to the online meeting prepared for the conversation. However, many times teachers reported that they needed to grade in that morning, or that an emergency occurred, so that some may not be as ready as expected. Such constraints were considered part of their regular professional duties.

The online meetings were sometimes in the morning, sometimes in the afternoon. The agenda was prepared in advance and teachers knew it a week before; meetings lasted approximately two hours (10am-12pm, or 1pm-3pm) where teachers usually started following the prompt of the pre-established agenda. However, the topics regularly moved into directions proposed by teachers, making it very difficult to finalize the conversations because of the involvement of the participants in the dialogue. Usually, the first 15 -20 minutes, after checking technicalities (“can you hear me?” ended up as a sort of metaphor of the research), teachers took time to gather around their personal or family issues, or politics, or general news. Very soon and every time, however, they turned the conversation deeper and deeper into education and pedagogy, to reach the point I describe in chapter 4.

Despite being called “online meetings”, over time they transformed into a blended type of meeting. Some teachers that did not like the online mode, or they could not manage themselves with technology, asked to be present at OISE in the room where the online meeting originated. This generated a discussion on the online character of the meeting, but the notion prevailed that the research was based in multimodality.
The meetings were held and recorded using Adobe Connect, provided by OISE, which also allowed for the secure storage and recording of the meeting. I downloaded every recorded meeting in a safe folder on my computer in order to process the data.

Teachers’ work in the research was divided into three major areas:

a) attending the monthly online meeting: teachers knew all the dates for those online meetings in advance, and attendance permission from their schools and boards was granted. Teachers discussed either the topics that were planned in a previously agreed agenda, or they brought their emergent issues and topics to the conversation. Most of the teachers attended online. Alongside with the online meeting, teachers had the opportunity to express their comments and opinions in a written side-talk chatroom.

b) attending a face-to-face summer institute: teachers were invited to attend a summer institute every August. For two or three days, they met and made an evaluation of the past year and generated topics to work on during the following session. The summer institutes were a space and time to create personal bonds among participating teachers, and among teachers and researchers.

c) posting in a forum called the Virtual Professional Learning Community (VPLC). During the time between online meetings, teachers kept in touch using the VPLC. They produced opinions, comments, greetings, posted personal academic papers and shared journal papers and references for discussion. Many teachers also used the VPLC as a reflective journal.

These three areas created a monumental amount of data that feeds the aims of my work, consisting of more than 80 hours of video-tape recordings from the online meetings and from the summer institutes, and more than 300 pages of VPLC postings and chatroom entries. I processed all the data to be coded using the NVivo package.

**My role in the study.**

In 2012, I entered into the SSHRC study (Kooy, 2011-2015) research as a Graduate Student and became an active participant in the research process. My participation included the online
monthly teacher meetings, data collection, data processing, data analysis, and presentations at two academic conferences. I also attended a course on NVivo10 at OISE, and several online seminars in order to learn how to better use this qualitative analysis package.

I participated in the meetings since the first day I came into the research, at an informal gathering at Dr. Kooy’s house, right after the summer institute for the second cohort in 2012, where most participants were present. Dr. Kooy introduced me and I established a first rapport with those teachers. Soon after, I became part of the meetings and I was always encouraged to express opinions and even lead parts of the conversation. This stimulated me to take further steps, as I was, without knowing, being empowered as a researcher and as a member of the research team.

As I became familiar with the data collection process and the how-to-do the data analysis, I began to develop alternate ways of accessing the data, and discussing how the main issues that would be relevant for the development of the research would systematically appear. For this purpose, a periodical team meeting helped me to gain awareness of the possibilities of the research. As we progressed in the process, I found myself elaborating theories on the issues teachers were discussing, that aligned with my personal academic interests. When I told Dr. Kooy about my own digressions, she encouraged me to use her data to generate and make my way to answer my inquiries, which was the first step of this dissertation. From then on, I started to build a case, finding aspects of tacit and explicit knowledge shared by teachers in the meetings, which evolved into the questions forming this dissertation.

**Participating research teachers**

The participant teachers entered the research in two consecutive cohorts: 2011 and 2012. In the 2013 Summer Institute, the two cohorts met for the first time, meeting and creating relationships. Later that year, teachers in both cohorts requested blending into one group for meetings. Each cohort had nine teachers. Over the course of the four-year study, only a few of the teachers were unable to continue: of the 18 teachers, 14 participated for the whole duration of the study. One teacher left the PLC because of maternity leave; another teacher pursued her doctoral studies. One teacher had her permit to participate revoked after her principal decided that the purpose of the research contradicted her own agenda at her school. Another teacher was abruptly denied to participate, after having obtained all permissions, soon after the process started in 2011. The
retention rate confirmed the commitment of the teachers. Table 1 describes the key features of each participating teacher.

Table 1. Participating teachers in the research process

<table>
<thead>
<tr>
<th>Name</th>
<th>Cohort</th>
<th>Location</th>
<th>Level and experience of teaching</th>
<th>Further Studies</th>
<th>Admin/leadership role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex</td>
<td>1</td>
<td>Ontario</td>
<td>Junior primary, experienced</td>
<td>M.A.</td>
<td>While in the study she became the vice principal of a school.</td>
</tr>
<tr>
<td>Elsie</td>
<td>2</td>
<td>Michigan</td>
<td>High School Experienced</td>
<td>M.A.</td>
<td>While in the study she became the deputy principal in her school.</td>
</tr>
<tr>
<td>Erin</td>
<td>1</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>M.A.</td>
<td>Department head in her school. While in the study she was seconded at a B.Ed. program in an Ontario university.</td>
</tr>
<tr>
<td>Hilda</td>
<td>1</td>
<td>Michigan</td>
<td>High School Experienced</td>
<td>M.A.</td>
<td>During the process she stopped teaching in the classroom to become a teacher coach in the school.</td>
</tr>
<tr>
<td>Julia</td>
<td>1</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>M.Ed</td>
<td>She became an IT education consultant at her board</td>
</tr>
<tr>
<td>Karin</td>
<td>2</td>
<td>Ontario</td>
<td>Junior Elementary Experienced</td>
<td>M.Ed</td>
<td>Informal leadership in her school</td>
</tr>
<tr>
<td>Leonore</td>
<td>2</td>
<td>Ontario</td>
<td>Primary Experienced</td>
<td>Ph.D. student</td>
<td>Experienced vice principal</td>
</tr>
<tr>
<td>Lindsay</td>
<td>1</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>B.Ed</td>
<td>Department head</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Name</th>
<th>Cohort</th>
<th>Location</th>
<th>Level and experience of teaching</th>
<th>Further Studies</th>
<th>Admin/leadership role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linda</td>
<td>2</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>M.Ed.</td>
<td>Department head</td>
</tr>
<tr>
<td>Molly</td>
<td>2</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>M.A. student</td>
<td>Classroom English Teacher</td>
</tr>
<tr>
<td>Naomi</td>
<td>2</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>M.A. student</td>
<td>During the process of the research, she became a teachers’ union representative</td>
</tr>
<tr>
<td>Norah</td>
<td>1</td>
<td>Ontario</td>
<td>Primary Experienced</td>
<td>M.Ed. student</td>
<td>Informal leadership in her school</td>
</tr>
<tr>
<td>Tabitha</td>
<td>1</td>
<td>Michigan</td>
<td>High School Experienced</td>
<td>M.A.</td>
<td>Alongside with her English class, she was appointed to be a teachers’ coach in her school.</td>
</tr>
<tr>
<td>Wanda</td>
<td>2</td>
<td>Ontario</td>
<td>High School Experienced</td>
<td>M.Ed.</td>
<td>Informal leadership in her school</td>
</tr>
</tbody>
</table>

The data

Data was collected from three areas: online meetings (including a chatroom), summer institutes, and the VPLC forum. These instances were specifically designed to enable interaction. Furthermore, teachers followed up with the ideas and information produced and gathered. Teachers collaboratively participated in planning the meetings and events and were involved in determining the agenda, as well as the direction of the conversations (Kooy, 2010).

The four-year body of data consist of: a) Online teacher meetings: All 35 meetings were videotaped resulting in approximately 80 hours; b) A chatroom open during the online meetings corresponding to each videotaped online meeting, c) Four three-day Summer Institutes, all discussions videotaped; d) a Virtual Professional Learning Community where the teachers maintained contact with other teachers through email, telephone and video connections (using
Adobe Connect), posted resources, documented their research in the schools and generated teachers logs of their learning and experiences. The teachers posted their reflections, opinions, questions and responses to others teachers’ postings. I attended all the online meetings and had full access to this data during its generation and production. Synchronous and asynchronous data collection occurred throughout the study.

In 2011 and in 2012 two consecutive cohorts of teachers were invited to voluntarily participate in the “Teacher Learning that Matters” research project (Kooy, Social Sciences and Humanities Research Council of Canada, 2011-2015). The research included the following types of spaces for teachers to gather and participate throughout all the project’s period:

a) Summer Institutes: Every summer in August, teachers met for three consecutive days at OISE, University of Toronto, to discuss a flexible agenda agreed upon by all involved participants. The face-to-face meetings lasted around five hours a day. The K-12 teachers came from their Ontario and Michigan. The days consisted up updates on teaching, learning and school-based research projects, reflecting on the year past and planning for the coming year. Time was spend reading, discussing ideas, conducting interviews, comparing surveys and teacher logs. Teacher met in pairs, small groups, and full groups. They generated ideas and topics for further discussion, supported and learned from one another. Teachers shared meals and dialogue. Food was an important aspect of these meetings since the shared food led to sharing ideas and narratives of school and their lives.
Most discussions focused on developing a more comprehensive understanding of teaching and learning issues already raised during the year. Teachers told stories passionately and creatively generated further ideas for discussion and development. The environment seemed informal albeit teachers’ concerns were shared very seriously, debating ideas and engaging in deep discussions.

b) Online Meetings: Teachers met online every four to six weeks between October and May, every year. This gathering was called Online Meetings that involved teachers and researchers. Kooy, as principal investigator, along with her graduate assistants, led these meetings. The “meeting room” included all the necessary equipment: cameras, microphones, screen and computers to record the meetings. However, as the project advanced, a few teachers preferred to regularly gather personally because of their preferences and easy access or because they continued to have technology concerns.

Online meetings were recorded using Adobe Connect software, a platform that allows teachers to communicate virtually on a screen. During the online meeting times, teachers could also use the Chat Room to make a comment or ask a question during the discussions. This was often used to solve issues such as headphone problems (“Can you hear me?”). As Fig.2 reveals, the screen mainly consisted of images of teachers being broadcast. In a side bar
their names and the chat room were visible. Both summer institutes and online meetings were synchronic and live events. Teachers met and their interactions were instant.

A Chat area existed within the online meeting site. These sidebar discussions also became an important source for the research. Teachers would use the chatroom simultaneously with the main online meeting. The input was displayed on the teachers’ computers screen, allowing other teachers to read and react. Teachers’ entries corresponded to opinions or side comments to a main discussion. Usually, they corresponded to needs to communicate or to express comments respect to a colleague’s opinion.

![An Online Meeting screenshot. The Chat Room is in the lower-right corner of the screen.](image)

Figure 2. An Online Meeting screenshot. The Chat Room is in the lower-right corner of the screen.

[Image purposely blurred].

c) The Forum: This is the third, asynchronous, way of meeting. In this web based space teachers contributed with their reflections on the discussions and ideas. The forum was called the Virtual Professional Learning Community (VPLC). It was to be used in the periods between the online meetings. Teachers wrote logs, reflections and opinions about something they were interested in. They also posted scholarly papers they wrote, or posted comments on something that drew their attention in an online meeting. The VPLC posts, most of times, were objects of intense debate among participant teachers.
Figure 3. The Virtual Professional Learning Community.

Analysis of the data

The collected data became the artifacts of my analysis. Teachers’ notions, considerations, and beliefs contained in their expressions, their judgments and opinions all are depositories of their principles and hopes related to their work. They unveil explicit and implicit ways of knowing that is a substratum of their work. Teachers’ voices at times are explicit; at other times require a second or third glance to obtain meanings and visions within an expression.

I watched the videos, read the teacher posts, and analysed them repeatedly since data analysis is an iterative process (Merriam, 1998; Stake 2005). After a second or third reading and active listening, I began with a set of codes and began coding videos directly on NVivo. I also integrated the written posts. Direct video coding involved selective transcription, transcribing those sections pertinent for the purpose of this study. I coded posts and chatrooms directly from the written text produced by teachers.

During that process, I produced nodes and sub nodes as concepts and ideological recurrences that appeared in teachers’ discourse, from the “bottom-up”. In doing so, I tried to minimize a tendency to use my own pre-conceived hypotheses about these teachers’ knowledge. I used notes and memos to keep a record of my reflections during the process of coding/analysis. After this process was done, I started to perform the interpretation process to produce analysis that would lead to new perspectives on TPK based upon their voices. I used my experiences as a school and
university teacher, insights from being a member of the larger research team, and my understanding of concepts presented in the second chapter of this dissertation.

I began the data analysis without designated nodes for coding. As long as I was advancing in the reading/analysis from the first online meeting recording, to the last posting on the VPLC, I was finding topics that the participant teachers defended with particular interest and passion. I understood the kinds of knowledge that related to their concerns, and the concepts that underlay specific topics of conversation. As a result, the list of nodes started to emerge from the teachers’ discussions. As long I was able to identify a node, I defined it in the space NVivo has for that purpose. Sometimes two nodes became very similar and I blended them. Eventually, the node’s list was complete as it is shown in alphabetic order in Table 2.

Table 2. Nodes and definitions for coding

<table>
<thead>
<tr>
<th>Node</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community as a space of collaborative knowledge creation</td>
<td>Teachers describe the community as the space that teachers can collaborate in the creation of new understandings of their practicum.</td>
</tr>
<tr>
<td>Epistemic knowledge</td>
<td>Teachers developing epistemic knowledge focus on meaning of their work related to pedagogic and subject matter knowledge, of subject matter as they learn to share intellectual and material resources, make connections between people and ideas to build new knowledge. In the VPLC forum, teachers engage in critical reflection and generating new perspectives about their work.</td>
</tr>
<tr>
<td>Ethical knowledge</td>
<td>Ethical Knowledge implies the consequences of teachers’ activities. It brings teachers to learn to question themselves and their colleagues. In turn, this led to generating professional knowledge and support as they increasingly seek and receive clarification particularly regarding students’ learning.</td>
</tr>
<tr>
<td>Feelings as a source of knowledge</td>
<td>Teachers recognize feelings and emotions as a feature of their practicum and they express them in their discourse.</td>
</tr>
<tr>
<td>Intuitive knowledge</td>
<td>Teachers develop representations and understandings of their profession based on images/sensations/ and on recurrent experiences that do not have systematization. They tend to “trust their guts”</td>
</tr>
<tr>
<td><strong>Node</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------------Adam Chandlee: 10:30 4-16-2023</td>
</tr>
<tr>
<td>Knowledge production as a shared asset</td>
<td>Knowledge is something to be shared among teachers, whatever it may be.</td>
</tr>
<tr>
<td>Knowledge that comes from awareness</td>
<td>Teachers describe or analyze situations after reflective processes. Most of times this brings praxis, or “praxis” moments. (Praxis as the way Freire uses the concept).</td>
</tr>
<tr>
<td>Knowledge to make decisions</td>
<td>Teachers elaborate their ideas explicitly to make or to support their decision making.</td>
</tr>
<tr>
<td>Moral or causative knowledge</td>
<td>Teachers’ critical questioning led to developing a moral or causative knowledge in the professional community to understand the sense and meaning of their past actions and how those actions and declarations may affect or have affected their practice and students’ learning.</td>
</tr>
<tr>
<td>Procedural knowledge</td>
<td>Procedural knowledge indicates how teachers learn to collaboratively identify and solve problems, to engage in relational learning, and, deal with technological issue as tool that hinder or support community building. Teachers recognize the tension between external influences and their school environments including such variables as administrators, family, personal and teaching history and context, as well as logistical and time issues.</td>
</tr>
<tr>
<td>Professional knowledge is created bottom up</td>
<td>Teachers are aware that useful or purposeful professional knowledge is created bottom-up instead of externally mandated, top down.</td>
</tr>
<tr>
<td>Questioning to unveil knowledge</td>
<td>Teachers produce questions demonstrating the issues that concern them.</td>
</tr>
<tr>
<td>Social cultural and political knowledge</td>
<td>This indicates how teachers are learning to socially distribute their knowledge as both resources and information-seeking. The teachers continue to build their community by engaging in relationship development and creating personal bonds through the informal dialogue that characterizes their discourse (e.g., taking an interest in the lives of the other teacher participants). This allows a holistic understanding of what teaching and teachers are.</td>
</tr>
<tr>
<td>Social relational knowledge</td>
<td>Teachers know how to navigate in school related social contexts, regarding students, parents, teachers or administrators. Command of this knowledge may help teachers to remain in the system or to leave.</td>
</tr>
</tbody>
</table>
I eventually obtained deeper insights on those emergent aspects of the teachers’ discourse through the iterative and contemplative analysis of the teachers’ discourse, together with side research I needed to perform on Ethics and Epistemology. The eidetic reduction of this process resulted in Table 3. All my working nodes seem to align with one or more of Aristotle’s virtues of intellect. Despite being a well-known framework to understand human intellect, it gains new meaning when applied to TPK.

### Table 3. Eidetic reduction from nodes into Aristotle’s intellectual virtues

<table>
<thead>
<tr>
<th>Node</th>
<th>Aristotle’s virtue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community as a space of collaborative knowledge creation</td>
<td>T (p)</td>
</tr>
<tr>
<td>Epistemic knowledge</td>
<td>E</td>
</tr>
<tr>
<td>Ethical knowledge</td>
<td>P</td>
</tr>
<tr>
<td>Feelings as a source of knowledge</td>
<td>P</td>
</tr>
<tr>
<td>Intuitive knowledge</td>
<td>P</td>
</tr>
<tr>
<td>Knowledge production as a shared asset</td>
<td>T (e)</td>
</tr>
<tr>
<td>Knowledge that comes from awareness</td>
<td>P (e)</td>
</tr>
<tr>
<td>Knowledge to make decisions</td>
<td>T (p)</td>
</tr>
</tbody>
</table>
At last, I classified the data within the three Aristotelian categories presented in the chapter 2: Episteme, Techne and Phronesis. This reference framework helped me access the teachers’ complex thinking and nuanced process of knowledge construction.

In the next chapter I organise and present research findings, and I address the research questions through categories of knowledge that emerged from the teachers’ dialogues and discourse.
Chapter 4

A situated typology of teacher knowledge

Teachers develop intense processes of knowledge construction during their careers. At times, this knowledge matches hard empirical evidence; at other times, it may be contradictory. Thus, evidence or assumptions may underpin and generate knowledge as understood in this study. Indeed, “knowledge” in this study delves into teachers’ understanding of relevant aspects of their professional world, the *verstehend* of the phenomena inhabiting their worlds.

In the first part of this chapter, I describe three types of teacher knowledge emerging from their discourse. Derived from Aristotle’s conception of intellectual virtues and expressed in the *Nichomachean Ethics* (2011), they are the same as those traditionally used to describe alternate constructions of human knowledge. They include: *episteme* (the intellectual, scientific, or abstract knowledge); *techne* (the knowledge needed to perform, to do things); and *phronesis* (the knowledge necessary for demonstrating wisdom and prudence).

These categories below present the knowledge and wisdom embedded in teachers’ discourse about their work and that of their students’ teaching and learning. The teachers in this study developed intellectual and theoretical perspectives over the course of four years. These knowledges were co-constructed in dialogic professional interactions, in school settings, and independently as they reflect upon their philosophies, representations, and practices. While these categorizations provide significant insight, and allow for description of findings across individuals, as with any categorizations, they are artificial divisions of reality. Thus, they are employed for analytical purposes, and do not capture the full complexity of teacher thinking since the three categories mingle and intersect.

Headings and subheadings in this chapter require clarification: they emerged initially from the analytical nodes developed during the data analysis shown in chapter 3. I analysed the data using the NVivo package for qualitative research. It allowed me to create nodes while watching the videos and reading the postings teachers produced. Headings reflect the concepts teachers discussed during the project, and offer the essence of particular discussions held during the investigation. Sometimes the headings move around the content of the knowledge teachers
produce (teachers and teaching, for example). At other times, they are about the place where the knowledge is created (the PLC as social space for constructing techne knowledge). Finally, other headings refer to how teachers create and develop their knowledge (the community in dialogue by questioning).

In the second part of this chapter, I reveal the complex thinking of teachers both within and through the categories presented in the first part. Here I signify how dialogue and questioning through an interconnection of the sense and meaning of the categories can reveal such thinking and ways of knowing, informing TPK.

**Teacher knowledge**

In the description of intellectual capacities, Aristotle (2011) distinguished at least three virtues that correspond to the means of how to approach to knowledge: episteme, defined as intellectual or theoretical knowledge; techne that is knowledge related to the way the things are done; and phronesis, related to the prudence, ethical-moral knowledge, and practical wisdom. I am using these virtues as an heuristic to portray the different ways that teachers come to know their profession and learn from each other in the PLC.

**Episteme: The intellectual knowledge of teachers on teaching and learning**

Teachers develop knowledge distinctively. Paradoxically, theoretical knowledge is the most explicit and in this analysis is associated to episteme, the intellectual knowledge created through the discussion teachers develop about their work issues. In this part of the chapter, I analyse episteme knowledge developed and articulated by the participating teachers. I discuss the explicitly intellectual aspect of teachers as thinkers; teachers as knowledge and theory builders; and the epistemic aspects of pedagogical content knowledge (PCK). I analyse TPK as it is built from their milieu, their teaching context, and/or from the sanctum sanctorum of decision making and belief keeping, which is their own mind, reflected through their opinions.

**Teachers as knowledge workers**

A first aspect involves the natural leaning to thinking and reflecting that teachers engage in when discussing their profession. Being aware is part of the status of being an intellectual, and teachers
in this research claim a long overdue recognition as intellectual workers, or knowledge workers. As Hilda says:

I am frustrated at external factors *perhaps* beyond my control: this includes national, state, and local political environments which dictate winners and losers in the educational system. Many, in these environments, get it wrong. For being a data driven society, this is also something we get wrong. We search for simple data and fail to embrace true data, which can lead to a transformative praxis. We pretend there is objectivity in education and the delivery of information, and often reward the most mundane and ‘mind-numbing’ activities.

A rationalist approach based on the observable, measurable facts have become embedded into educational practices and vocabulary: the use of the word, “data” and “big data:” For example, implying quantitative information created from measurable facts. Hilda’s criticism represents a critical reflection on the nature of education in a “data-driven society,” as a reductive approach to educational activity and a normalization of ineffective actions. That minimalist approach resides in an objectivistic realm, missing non-recognised, subjective aspects of teaching. Hilda critiques the tradition of teaching toward pre-established learning objectives, calling it “mind-numbing”, arguing that such procedures fail to surface “true” data that would allow teachers to facilitate transformation. Her concern goes far beyond the “professional whining” in which media and literature often claim teachers indulge (OECD, 2000). Instead of data only being used to quantify achievement or failure, Hilda imagines widening the concept to facilitate wider and deeper educational purposes, such as change. In this respect, and similar to Hilda, Erin argues that:

The word data has very negative connotations. It's all about pass / fail rates (…) My question is: What kind of data is considered valid? What about day-to-data experiences? Doesn't that count for anything? How do we bring these two things together?

Teachers like Hilda and Erin need to create innovative meanings to the expression “data”, and new uses for it linked to widening the scope of understanding it beyond “pass /fail rates”. Data related to quotidian, everyday experiences need to be recorded to make decisions based on the same human experiences that gather in the school.

Norah and Alex, who are experienced primary school teachers, discuss on other aspect of the problem. In their conversation, they discuss the need to recognize teachers’ ability to create and use educational theory:
Norah: I think we need PD where teachers are creating and debating theory. Further, we need to take ownership. When we hear intellectual, we hear high-bow. An intellectual challenges the status quo. Alex: when you talked about top-down, this is what it means?

Alex: I believe that professional and teacher judgment is powerful, [for instance] I have a big peeve with assessments: I feel that I should assign a grade based on my judgement.

With words such as “intellectual” and “judgement”, Norah and Alex clearly take a theoretical stance to teaching. They consider practice to be an arena of understanding the work itself, well beyond any mere narrative of facts; thus, they give visibility to a space that is not traditionally used (or recognized) for developing theory. They suggest that, through the dominance of supposedly objective assessment data, the power of decision-making has been taken away from them.

Norah associates PD with a process of creation-of-a-theory aspects of teaching that, for her, is a natural part of her teacher thinking and activities. Taking ownership of the intellectual aspects of teaching means reflecting on the profession and making informed decisions. This links to what Alex expresses about using her own judgment, affirming that teaching is an activity with intellectual considerations.

Creating and demonstrating acquired knowledge not only empower teachers but also generates determination. In rejecting the typical kinds of mandated externalized PD activities, the teachers propose alternatives, other forms of PD including creating and debating theory or assessing student learning using teachers’ own judgement. Norah reinforces this point by stating:

Imagine having time to modify your plans for your learners that are missing out on some portion of your program. Imagine having some time to prepare more precisely for your ELL learners now that you know first hand their fluency, personality and learning style. Imagine having the time and space to move furniture and reconsider what and where everything is located in your class.

Norah’s invitation to the “imagination” is not superficial. She does not see imagining as mere wonderings about school issues such as the value to language minority learners of increased teacher planning time. Rather she analyses her context to propose doable changes. She imagines a culture of work in which she would be able to modify plans to attend to those students who lag in achievement. She trusts her own knowledge, but needs time to be prepared. She also needs to be skilled at adapting curriculum and teaching to specific learners and their dispositions. Finally,
she needs to be thoughtful to modify traditional ways of arranging classrooms (Haraway, 1988; Kanu, 2003). Norah’s claims for an intellectual approach to teaching are not related to her intellectual understanding of subject matter, but to her understanding of the essence of the relationship among teacher, knowledge, and student.

**Teachers as knowledge builders**

Teachers develop professional knowledge from quotidian experiences to be recognised and shared. They saw their status as “legitimate knowers” and knowledge builders in a data- and economy-driven society. Leonore states:

I recognize that a paternalistic structure in our education system still very much permeates our learning institutions, but if we can’t trust the very people who teach our children to understand the process of learning, then why are we placing them in schools to teach? While I know that part of it is the power and control reflective of a paternalistic, hierarchic system, I strongly react and object to the lack of faith the leaders seem to have in teachers themselves. How can we learn through dialogue and reflection if there is no trust and respect for us as professionals and our inherent right to identify how and what to learn?

Leonore tackles one important aspect of the relationship between knowledge and power. This relationship is situated within an assumed definition of leadership, the relationship of such leadership to authority, and the pervasive disrespect for teachers’ authoritative knowledge. Articulating a similar vision, Norah explains:

The “expert” that pulled me from my classroom for a talk--who knows nothing about me, my students, my pedagogical philosophies, my experience, my program, my interests, my research, my physical classroom or my scheduling limitations (nor do I know anything about her), offers me resources, websites and tips that have either long been a part of my practice or have no place in it. When I speak up to explain this, I realize that she is unable or perhaps unwilling to redirect her talk, unable or unwilling to move away from her plans/the agenda to meet my “needs” as the learner. And this is tragic. This is a mirrored reflection of how we are often not equipped to teach our students. Now I have to ask, if she is the expert, teaching teachers, what example is she setting for them? Should we be surprised that our students are detached from school? She is not looking to learn from me, nor willing to discuss or debate. This expert was looking to pour her knowledge into me. I can only imagine what a child feels like when treated like this. After I realized that she wasn’t really listening to me, I tuned out. (...). The education system often insults your intelligence, as well as my own. We tackle education as if it were only our duty to nurture your academic side and as if your academic identity is somehow isolated from your soul.
Norah unveils the implications and effects of top-down PD that assumes teachers are empty vessels waiting to be filled. She decries the “insulting” position in which classroom-situated teachers have been placed by external advisors, and explains how traditional PD limits teachers’ potential to be authoritative within their own work.

Similarly, Wanda and Karin state:

Wanda: I’m really thinking about the difference between power and authority. A great leader has authority but is not preoccupied with maintaining his or her own power. I think as teachers we get caught up in our own power - want to maintain our control. A great leader is not afraid to be vulnerable and say what they don't know.

Karin: Yes! We don't know everything (we have access to information so quickly through the internet) I don't pretend to know everything in front of my students and I don't think administrators should either.

In this conversation, Wanda suggests that among teachers the relationship between power and authority is traditionally used to maintain a position of pre-eminence regarding knowledge, and that the fact of not knowing may weaken the status of the teacher. Karin asserts that today knowledge is easily accessible and updated through using the Internet. The problem remains in identifying the authority to interpret and develop knowledge, and who exercises the leadership, and for what purposes.

Teachers involved in this research recognised that being aware of the power and authority they hold needs ongoing professional education, to enhance student learning and teacher professional consciousness. Although situated in the experience of everyday, participating teachers were able to build a professional approach to epistemic knowledge.

Teachers on the teaching profession

Teachers construct epistemic knowledge, informed by practical and theoretical considerations from their everyday experience. This analysis shows how teachers’ discourse is full of meaning, reflecting the construction of theoretical approaches to their work and how and what they learn.

Participating teachers proposed different ways to understand what teaching is about, and who “teachers” are. Norah explains:
What does it look like in my class? I would like to think it looks like how we interact in the classroom and the way my kids take on a teaching role. The way my kids speak up for themselves. I am anti breaking up our kids for the human beings they are (sighs) the academic side is the teacher, emotional is social worker, and parent is value. I'm against that.

Norah shows how students can also act as teachers in her learning context. She theorizes that classroom teacher-student interaction is central in quality education, as it is the place where humanity meets itself, with specific relationships built around the cultural objects, of students and teachers that work together. This vision shapes the role of the teacher as someone alongside “the kids”. For Norah, emotional and social aspects are involved in teaching activities and theories. Theoretical knowledge of teaching for her, would be larger than and distinct from only the knowledge of subject matter, and goes beyond traditional teaching activities. Karin, an experienced primary teacher in Ontario, declares:

Today I read (and heard!) Christine Richmond's "Managing Teacher-Student Relationships: A Minimalist Approach" off of the EFTO "Research for Teachers" online magazine. I think it's a brilliant way to provide information to teachers. (…) She writes that teachers need to be explicit in their expectations, not over-correct behaviour, teach a smaller number of expectations and 'generously acknowledge' learning. I really think that is true, and what I've been trying to do.

Karin, as teacher-theorist, shows how she broadens the spectrum of her intellectual activity in teaching by reading specialised literature, juxtaposing and sometimes aligning her thinking with her reading. Her theory emphasises the means of relating with students and subject matter in ways that make handling new information and new ways of doing things more accessible to learners. She agrees with Richmond’s perspective on how to manage behaviour in the classroom from the activist perspective of a teacher—finding in Richmond’s position the assurance to continue teaching in ways she believes in and feels make sense.

The teachers in the project also discussed the relationship between teacher and teaching with respect to appraisal, assessment and evaluation, which are recognised as core practices of teaching. Participating teachers derived knowledge from these activities that are theoretical in nature (Stoll, Fink & Earl, 2003), since every evaluative action involves a representation of learning (Kooy, 2006). Evaluation (judging student learning) was understood by teachers as one

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3 EFTO, The Elementary Teachers Federation of Ontario
of the most critical activities teachers perform, although the teachers critiqued the usual assessment practices. As Alex explains:

I hear so much talk about tests; why does a summative piece have to be in the form of a test? why can't they do a podcast? for me a test is all about rote and memorization; my students are assessing themselves in grade 2; I believe that the secondary needs to catch up with what the primary teachers are doing; tests are out-dated.

Alex debates the formal dominant emphasis on grading and testing in the school experience of students and teachers. Alex urges high school teachers to “catch up” with primary teachers when using other tools than closed-answer testing to evaluate students’ proficiency. At this respect, Naomi, an experienced middle school French and Social Sciences teacher, argues:

When you say alternate ways [to generate evaluation processes], I found it really helpful because now every time my kids present, I have them make a video. I actually record them all the time (...) because if I record them, I have proof, for instance, to show parents. I can show them what is a level 2 or a level 4. It's amazing, because kids can watch themselves and then they can pick up on what they can do better themselves. I don’t even have to say anything.

Naomi discusses alternate ways for students to represent their learning in summative assessment. Teachers like Alex and Naomi propose that the research points to ways to improve their evaluation. While Alex discusses the purpose of the testing system, Naomi argues for finding ways to providing meaningful sources of information about student understanding and then giving effective feedback—both approaches frame teaching as a complex activity. In the conversations presented above, teacher participants demonstrate clear notions of what should be done to improve very practical aspects of teaching which are profoundly embedded in daily practice.

Within the context of teachers’ development of professional thinking, teachers in this research develop an awareness of their own processes of education. They do this specifically in both initial and continuous education, which usually comes in the form of PD. Indeed, as Hilda states:

I've been contemplating the decline of requiring teachers to take educational foundation courses which explore the social, political, economic, historical and philosophical dimensions of education. Many colleges are no longer requiring pre-service teachers to take these kinds of courses and these departments are disappearing in colleges in the United States. Are these types of course important to teachers? What are the implications for teachers, students, schools, if teachers do not have an understanding of these larger
social issues and how they intersect with teaching and learning? How might Foundations of Education and Educational Studies re-assert its presence inside and outside higher education?

Hilda argues that philosophy of education and related theoretical content are rarely included in curriculum mandates in contemporary teacher education programs. She theorizes that this gap in theoretical thinking influences and limits teaching activities, and their understanding and relationship to societal issues. She suggests that the theoretically rich learning opportunities have implications for the whole teaching career. Norah suggests:

My findings [from my school based research] show that mandated PD is perceived [by my teachers] as a necessary evil. I am incredibly disappointed with this perspective because it is based on the assumption that teachers will not learn unless it is forced, and it reinforces the belief that authentic learning can occur under such conditions. I am struck by the imagery of plugging a child’s nose in order to force their mouth open so that food can be forced down their throat. What about changing the menu instead?

Norah’s ideas contrast with the predominant notion that teachers lack ability to learn (Fullan, 1993). She challenges the value of a PD system that does not trust teachers to make decisions about their professional development. Leonore observes:

I believe that learning happens in the same way that our brains function: an integrated system of networks. By sending out or receiving new thinking and merging it with our current understanding, we create new understandings. When we reflect together as professionals, our knowledge multiplies thousand fold. The ability to create new knowledge clearly transfers into how we teach our students and this leads to improved student achievement. (…). There seem to be a paternalistic idea that somehow teacher is a kind of tabula rasa and unless experts or leaders guide, inspire and lead them, we are incapable of knowing what we need to grow and develop as professionals. Inherent in this notion is the idea of teachers as children and the leaders/experts as parent/god-like figures that are essential for teachers’ growth and learning.

Norah sees PD as a “consequential” activity for professional learning, yet shares Hilda’s view that theoretical knowledge of teaching is under-emphasized. In Norah’s view, PD is a taken for granted and is normalized in the system. Leonore theorizes that teachers continue to be treated as second class professionals unless they attend respectfully to their own work in creating “new understandings”—which could turn teachers into useful, albeit dangerous, agents of change in the school system.
Either initial education and PD issues presented here by teachers portray an attempt to understand and make sense of teacher matters in a theoretical-like way, by questioning and providing explanations to situations that are at the core of their activity.

**Pedagogical Content Knowledge as epistemic knowledge**

Teachers also develop epistemic knowledge focused on the relationship between pedagogy and subject matter, including theory and academic discipline knowledge. This focus is transparent when teachers produce and share intellectual and material resources for their teaching, making connections among ideas to build new knowledge. The evidence in this study shows how participating teachers engaged in critical reflection, generating new perspectives about their work. Yet, the role teachers play in shaping this knowledge is often neglected, or at the very least, is invisible in the literature (Kooy & Colarusso, 2013).

Participating teachers in the learning community taught in different K-12 schools from a variety of school boards in Ontario and Michigan. Their conversations on pedagogical content knowledge (PCK) came from their wealth of pedagogic experience, which vastly exceeded “didactic” approaches to teaching. They speak for themselves and their own backgrounds and experiences when they tackle matters of teaching their specific students. Alex provides a narrative on her first days as a teacher in grade two:

> The last two weeks have been hectic. Wow! What a change, I’m loving it. The energy level. It’s amazing - for these 7 years-old you are just ‘teacher’. They love to colour, cut, read, listen, to stories, play on the carpet. The boys love to build. Of course you cannot ignore the bathroom breaks, also the constant “teacher! - I'm hungry, when is recess?”. What fresh enthusiasm - what I realize is that everyone is motivated, everyone does their homework. First thing in the morning they say “teacher, I did my homework!” (...) And the questions started coming: "how many days in one thousand years?"; "do baby birds cry?" How did they get from here to the often lack of interest I usually see a few short years later? Sad - a question worth answering- as one colleague said, "let me know when you find out".

Alex’s pedagogical capacities frame her beliefs for the purpose of schooling (with the intrinsic motivation of students as a baseline), and the difficulty in delivering content prescribed in the curriculum, particularly when students lack motivation. Indeed, she saw the “fresh enthusiasm” of students emerging from their inner motivation. Moreover, Alex captures the ambience of a
classroom that interrupts the traditional image of a room filled with quiet children sitting in desks and chairs, row on row.

Tabitha and Erin carry on a dialogue about the concept of pedagogical content. Tabitha argues that:

We have a problem because the United States has adopted the Common Core curriculum. (…) It doesn't focus on a piece of literature or grammar or vocabulary you have to learn; it focuses on skill development (…). How do you teach the grammar? or how do I teach a novel, as opposed to what novel I teach?

Tabitha problematizes the teaching of discreet skills rather than comprehensive content in contemporary education, or how teaching and learning skills would be the new content in education. Tabitha highlights the link between skills and cultural knowledge that teachers need to know in order to get both, contents and skills aligned to the required high stakes standardised tests. Erin observes:

How do we know that the students are learning what we are teaching? How do we know whether or not the students actually want to learn what it is we are teaching? My response to these questions, for now, is to shift my teaching strategies completely. (…) That I will worry about "covering curriculum" less and think more about student mastery of reading, writing, critical thinking skills.

Erin’s representation of teaching the content focuses on students’ interests rather than curriculum mandates. She theorizes the difficulty in capturing students’ complex learning using traditional, pre-established teaching objectives and evaluation tools. However, Karin declares that:

I taught them strategies for equivalent fractions: doubling, tripling, quadrupling, halving, and used grid boxes and pies to show why. I asked students to show me with a “thumbs up”, if they felt confident, a thumb sideways if they still had questions, and a thumb down if they needed to work more with me. Half of them showed a “thumbs up”. I said, "Okay, we are going to do some more questions together before we get to your assignment." Some kids grumbled and said, "I get it, can't I just do the questions?" (…) I worked with the half who needed more help. We worked on two or three more problems. When we finished, half of them were ready to move on. They made comments like, "OOOOOH, I get it!" The last 7 students worked with me on the homework problems, having all eagerly moved to the front where I have a round table.

Teachers produced discourses both embedded in their daily practice and related to major issues in educational theory and policy making. Teachers produced a knowledge that helped them in
decision making and in viewing the school world in specific ways their pedagogical content knowledge was fed by both their experience and intellectual knowledge.

**Techne: Teachers as professional practitioners**

Teachers declare understanding of teaching through approaching the “art”, the *techne*, of teaching: the school environment; the community teachers create to share and learn, and; the practice of teacher leadership. For these three areas teachers provide evidence of professional awareness.

*Techne* knowledge within the school context

Teachers’ place of work is the school. However, school is not only the place teachers create knowledge. Regularly teachers are told what to do in schools. Hilda, a high school teacher and a peer coach, explains how she requests ways to help her colleagues: “My plan is to get a needs-assessment survey to our teachers. I need to know what teachers need”, viewing her position as a service to her colleagues. Hilda implies that her colleagues were knowledgeable and entirely competent in articulating their needs.

When teachers build new experiences, such as conducting a PD session, they may need support from their colleagues. Erin notes:

> I am presenting a PD session at a conference next week. I am very nervous. How do we build compassion into our teaching work? I am very inundated into the technical side of teaching. The piece for me that is missing is the face behind the data. (...) Of course we have to show the data. We are using a book by Goldman. Thank you, Lindsay, for discussing empathy (...). I think the people in this room should be running PD sessions. We want to hear from each other! Real talks! It made a big impact on us.

Erin notes it should not be extraordinary for teachers to conduct PD based on their experiences. She realizes that she is not afraid of presenting data, but of trying to “build compassion” in an arena where the “technical side of teaching” is the rule. Erin overcomes her anxiety by recognizing that her colleagues had been supporting her through the process, not only relationally but also with academic resources.

However, Erin acknowledges the current system may not often recognize teachers as knowledge builders and developers. Norah explains: “we are not valued as knowledgeable, resourceful
participants. It is clear when time is not allocated to simply getting to know our colleagues in a PD session”. Eventually, Erin received feedback from teachers who had participated in the professional development session and recalled, “People loved that we're teachers; it resonated; we didn't come off as these experts from higher up, we were just in the trenches - and I think this is something we need to hear more, the feedback.”

Hilda’s and Erin’s statements represent school-based, collegially-built practice of reflection on teaching as a legitimate source of professional knowledge that affirms their quality/authority as professionals. Tabitha adds: “I had an amazing learning experience with my mentor teacher; I can [also] learn from my student teacher”. Naomi adds:

I think the problem is that admin is creating the agenda, and I believe teachers need to create the agenda. Ask the kids. Where do you need help? They know. (…) Another thing, it would be nice to ask kids to help kids. They could work together.

Teacher participants recognised the importance of considering the voices and needs of students while striving to negotiate ways to deal with school’s issues. Naomi expresses her concern for involving the students in classroom curriculum agenda creation. This involvement may range from asking students to share their needs, to discussing protocols on working with students in classrooms. Alex observed:

Teachers are coming up to me with professional articles, topics they would like to discuss, issues in the classrooms that they would like to address. It's amazing. Teachers have now began using the 'community theme' to build real learning communities in their classrooms. One Grade 7 language teacher is now using the idea of 'circle time'. She pushes the chairs back and students sit on mats in a corner of the classroom. Students get a sticky note and each write one thing that they are thankful for, one thing they wish for etc. The students choose to share what they have written during this circle time. At the end, they post their notes on a chart paper in the classroom. The students really seem to enjoy this experience they have responded to this very positively and it's creating a nice character and community building activity in the classroom. Other teachers like this idea and now this is an activity we will do on Friday.

Alex said that the teachers involved in her research project were open to discussing protocols for working with students in classrooms, and that they were also more open to uncertainty.
In the creating and using *technē* type of knowledge, teachers shared their successes in the use of tools in a classroom. Hilda explained how with teachers in her school, they could jointly overcome a difficult situation:

I learned that writing a survey is much more difficult than I had initially imagined. It takes great skill to construct a survey that yields usable and relevant information. I lost count on how many drafts I did before releasing it to the staff this week. While I am sure it is still not perfect, it is light years away from where it started. Most importantly, without the support and guidance of the members of this group, I would not be experiencing the results that I see so far.

When agencies or teacher training centres ask teachers to tell their stories of success as experiences to be replicated, they are asking teachers to bring to the surface knowledge that may affect both the speaker and the listener. Under the surface of such an anecdote lies an intricate system of relationships and pedagogic decisions often masked to make a point, a picture of “good practice.” Hilda’s recognition of how hard it can be to obtain a good result without the help of her context and her teacher peers. In that vein, Alex inquired:

My question is how do you nurture/develop a natural curiosity for learning among eight years-old? This will see me videotaping myself teaching and then blogging about this - two tools that teachers can use as a part of assessment for learning - for both teacher and student learning. My hope is to share my experiences with teachers and how I've used this reflective tool to improve student learning in my class. Wish me luck.

In her developing of procedural knowledge on how to nurture students’ natural curiosity, Alex’s own learning became a source for her students’ learning on complex issues. Similarly, Karin wants to know how to improve her teaching to support her students’ learning. She states,

My focus needs to be on creating as many rich, hands-on activities as possible to facilitate learning, student engagement and buy-in. I've managed to make science, drama, and even spelling kinetic and dynamic. I have to work on making combined grades math classes a lot more hands-on. I also would like to improve my writing instruction for this age level.

Karin shows her drive to generate materials and tools for student learning in complex situations such as multi-grade classes through declaring her previous efforts to improve, but also being aware of her needs to improve her teaching.
Teacher participants recognized that they benefitted from the experience of being in a community, in personal and professional ways. Expressing agreement with her colleague Alex, Erin says:

This community has been good for me. In education, we want to do it all and I'm learning like in life, there's going to have to be a cost: trade-offs at the end of the day. If we introduce one thing into our schedule, what are we willing to give up? We have to have that conversation.... So, if we do this PD session, which PD session are we going to strongly encourage our principals not to send us to?

Erin unpacks something hidden from those not in the teaching profession, which is proposing an alternative for developing and delivering PD. Erin identifies an area out of her comfort zone for teachers. Rebecca adds:

I agree with Karin. I'm a younger teacher. When I asked for help from my administrator, I was told with my other colleagues that we were the experts. (...) I'm really happy to have this forum to have other women, other great teachers who are wanting to become better and we can support one another in that.

For Rebecca, understanding of working environments improves with the companionship of such a community. Being a part of a community helps to create bonds and relationships and feelings of gratitude for the opportunity to be together. The knowledge created in this environment is practical knowledge, techne. In this respect Erin says:

We are leaders in our profession. We are not the norm. It can't be forced. (...). I like being connected in between meetings; I had a prof who called the classroom “sacred space”, I think that's what we have, a sacred space, because I share with you these intellectual ideas that are so precious to me. The day to day is so busy. When I carve out time, when we say okay, I'm going to have 5 min now to sit, see who posted, it's so therapeutic. It's like going for a 20 min run or spending the morning in bed reading, which is something I haven't been able to do ever. In such a short time I have come to really need you guys.

This techne knowledge describes how things happen within the community as part of teachers’ awareness of the nature of teaching. Teachers construct knowledge at the centre of a relationship that generates the sacred fire of knowing, to follow the image of the myth of Prometheus. Sacred as the teachers’ word, the textuality they share (Denzin & Lincoln, 2000), a word that is
pronounced, heard and affirmed within the confines of their practice. Lindsay expresses the value of the PLC for her professional learning:

I think this [PLC] group really supports me being a trailblazer in my school. We're like-minded and we support each other to push the (professional) boundaries. We're out of our bubbles. (...) It's like I have seen you the other day. Norah, I am really happy for you that you are expecting. We talk about our personal lives; we're connected on Facebook. The further we go, the stronger we are.

Like Erin, Lindsay emphasizes a key characteristic of the professional learning community: The ability to springboard ideas for participants’ development. Development positions her as a leader within her school. Lindsay also reminds us of the bonds that were created at both personal and professional levels. Tabitha, Erin and Lindsay’s conversation tackle the issue of community:

Erin: I compare it a TV - this is our second season. We spent last year trying to figure out who we are. I find today, we're jumping right in to the story line.

Tabitha: I think season two is a good way to describe it. I don't have to re-establish our relationships.

Lindsay: I agree. This time we're much more comfortable with one another. I don't have to worry about what people will think. I feel safe. In the schools, we do hesitate. Here we've established friendships. We're on Facebook

Erin: Can I add something? Being part of this group has helped me learn how to dialogue differently. Because the nature of this group, versus how I sit down with my department, is strikingly different. Even though we do have space here. Like for Norah to express her deep, deep issues, it never gets down to bitch discussion. This highly constructive, thoughtful conversation. I like having these conversations.

The three teachers frame a key feature of this professional community as the creation and maintenance of a subjective “safe space”. Teachers value the sense of having a relationship that lasts over time. The space in schools for community appears to allow for the possibility of feeling supported, a way to relate to each other as teachers and knowledgeable professionals. This community is considered as a space for support and learning, as depicted in Lindsay’s and Karin’s interaction:

Lindsay: Here we support each other professionally. I know I have you and this group when I have no one to talk with in my school. I get insights from this group.

Karin: I completely agree with you. We're a self-identified group. Sometimes when I try to engage my staff about data or about something I've read, people look at me as if I have
two horns on top of my head. So it’s really nice to be with a group that actually wants to talk about these issues and maybe share information.

Lindsay and Karin recognize that the communicative professional learning group offered relationships and support for participating teachers, reinforced by Leonore:

It's nice to have a group that you can talk to. We don't often have people in our school we can talk to. (…). I think being part of this allows us to be professional - I'm not the only one. Otherwise if everyone's complaining you can fall into that. If you have a question you can raise it.

While Leonore focuses on the professional aspect of a community, that generates professional knowledge through establishing horizontal relationships, Elsie, an experienced high school teacher, provides a different perspective. She states,

I attempt to find communities which can foster personal and professional (the distinction is almost irrelevant) investigation into the art of instruction, curriculum, and educational design. I view communities as a way to both calm the frustration (although I don’t find much joy knowing others feel similarly about their experiences) while making connections to life outside my individual experience.

Elsie emphasises the personal and the professional aspects of teaching. Whether the community addresses professional issues or personal concerns, the whole person informs practice. This becomes a most relevant aspect that transforms a community as a safe space, a hub for knowledge creation related to the empowerment teachers as Julia expresses:

Norah said "this is a thinking space". I realized in that comment how often I do not take time to have a thinking space. My practice seems busy with "doing". Reflection happens but it is fleeting and informal. It was said that "time is our currency" and we aren't rich enough to have the time to do deep reflection. I am worried about not covering curriculum, making calls home, developing rich lessons, grading accurately. The time I am given in this group allows me to reflect on what is important to me. Moreover, I find the dialogue with colleagues enriching. While we are all on different paths I am continuously inspired by the words of others and their journeys and missions weave into mine despite the differences.

One feature of the PLC demonstrates that the encouraged teachers take further steps in their career development, demonstrating agency in their professional learning in a community of teachers, as Rebecca states:

I really think it would be great to meet in the morning sometimes and have a work session with one another. Our line doesn't always work, with delays and sound, so if we
could meet in person with materials in front of us, that way we could support one another. Rebecca proposes new ways the community can be done. In other cases, ‘the steps forward’ are different. Leonore’s noted:

For me, this experience of collaboration is an experience like no other I have had. I know that I was craving professional dialogue on a different level, and also that I was not finding it in my daily work. I think this hunger was one of the main reasons why I decided to continue my studies in education.

The collaborative work led a teacher to enter graduate education. When teachers work together, the benefits are not limited but may begin to expand to others. Wanda says:

I'm sorry that I was unable to share today, but I really enjoyed hearing what you are working on. Even though there are specific avenues we might travel on, what I hear when I listen to your ideas is that we are all concerned with social justice, with student empowerment and choice, amazing! (...) Students recognize when teachers are collaborating, and that will trickle down to student achievement.

Indeed, as Wanda suggests, teachers who bring professional knowledge from the PLC back to their schools, they contribute to a cycle of professional empowerment, critical observation of reality, and arouse germinal aspects of leadership.

Teachers recognize the PLC as the place to build their knowledge and elaborate on their opinions about education and teaching. In this setting, teachers feel confident to express their concerns and ideas to develop professional thinking. Norah, states this mode of knowledge creation requires an interest and disposition to trust in the possibilities that dialogue can generate for teachers’ own development. As she says, “It's a time to share. [Having] this safe space, it's the only way to find others' interests”. Norah reinforces both the importance of the space as forum for sharing knowledge as well as a place to find common ground for building new knowledge. Further, this occurs when teachers are in position to either offer or request for help from their peers in order to establish new perspectives and positions, or, as they are required to act as a resource of information. Alex points out:

I would like to see a community coming out of this and engaging in some real professional development activities. A lot of the time we focus on the hard skills. I'm a math teacher; I'm guilty of it. But that's not necessarily what impacts student learning. What does is those soft skills we often ignore – for instance collaboration, to be in a learning space where we trust each other.
Alex stresses the need for collectively pursuing the possibility to excel as teachers. The possibilities of this good opportunity allows for building this knowledge from the ground up, through trusting each other.

This study shows paths that teachers within this PLC walk to produce knowledge within a group that empowers themselves and others as teachers recognized as “knowledge producers”.

The practice of leadership as *techne*

The teachers discussed professional and teacher leadership as an aspect of the professional application of *techne* knowledge. In this respect, Hilda suggests that:

> Some teachers had a problem with me being pulled out of the classroom to do this kind of work (peer coaching); because of the lack of leadership, there are subcultures that have developed because there isn’t a sense of trust; as professionals, we should be supporting in collegial ways and trust each other.

Notions of leadership among participating teachers manifest in their involvement in academic activities such as being peer coaches like Hilda, or going to conferences, or publishing papers. This conversation between Alex and Erin helps to clarify this point:

> Alex: I love what you said [Erin]. A lot of us are going to go out to do conferences. There are a lot out there. We can go out there and present. Basically, I am a teacher leader in my school. You bet people are going to hear about my work. It's going to go out there.

> Erin: I do however think we still can encourage and mentor the young people who come in and they see us and we're a growing force. We too can build a voice and build a pose of young teachers who are vibrant and they want to do stuff and are like wow, you're so engaged after all these years. We have to be those advocates.

> Alex: For me, in terms of resources, I meet with my teachers – what gets me in trouble is that I'm a visionary. That always gets me in trouble. There's so much depth and knowledge that we have. Just look at Erin's great presentation. There may be an opportunity to see each other in each other's environment. It would be beneficial on my school.

Alex’s and Erin’s voices indicate a noticeable tone of independence of thought and a strong will, thus capturing two key characteristics of teacher-leaders. Their “thinking ahead” allows them to figure out the future: “You bet people are going to hear about my work. It's going to go out there”; or “we too can build a voice and build a pose of young teachers who are vibrant and they
want to do stuff and are like wow, you're so engaged after all these years”; or “what gets me in trouble is that I'm a visionary”. Alex reflects:

If we don't lead, where is it going to be the change? Great leaders are in the classroom. It's taking that risk to say this is what I believe in; this is how learning happens and this is how we engage students; so the whole idea of test, test, test, is outdated; even if I had wanted to test my grade twos, I can't; they can't write; but I have to access their learning; what they can do is speak; so I have to invent ways to reassess student learning; students should be able to say and to demonstrate; not everybody learns through writing something on a paper.

Alex’s expression of a critical stance in front of school leaders is particularly powerful as resistance to imposed, top-down initiatives. Tabitha adds: “If they are going to sell you a program, they sell you a program. I am with Alex: you don't know my school, don't tell me what to do in my environment”. As a result, teacher participants tended to neglect or reject initiatives, policies and agendas of “senior” leadership. Tabitha’s approach reflects a common response to the experience of teachers: teachers do not easily accept someone telling them what to do. In this research, participating teachers offer themselves as a way to improve teaching and learning in their schools and they do so in many different ways and with unique purposes/reasons. For instance, Hilda recognizes:

My mentors are saying the same things, calling me when job posting appear at different schools; if I leave this school I lose all my job tenure; I'm on a yearly contract; I am a leader here behind the scenes; I approach my principal on issues and he's been supportive; I declined being chair and I said there's a lot of people who you've got to build leadership capacity in this building.

Even when working conditions were not optimal, Hilda still felt that she could make a difference in her school with a sense of altruism that reflects a sense of leadership responsibility. In fact, she is more concerned with developing teacher expertise in her school, although she is satisfied being an understated leader.

Karin states that “I realized that I needed to be the change. I have morning dates [with other teachers] to explore some math software. Tomorrow I have a lunch date. I just wanted to introduce teachers to each other”. Karin is someone that takes charge of lack of leadership in her school. Similarly, Lindsay says that:

Right now, I need to talk about teacher leadership in my school. I know what I need. The
PDs in schools are a waste of money. We just sit there and have been told. Nobody says anything. It has been like this for years, since I started teaching in 2004. Now it started to get on my nerves. I don't like that! I feel *deprofessionalized*. I want and need to do something for myself and the teachers. You should trust us if you want us to do great things. If you don't trust us, how do we trust our kids. It is insult to all our intelligence. We have great things happening in our school but there is no trust. We teachers got a lot to talk about but we must stay silent. It shouldn't have been that way! That's why we come here! (…) our last principal had her own agenda; I like that this (new) one listens a lot; he spent the last 2 months listening to us; I feel valued as a professional a little more; but he's still obligated to bring down initiatives; it's all great when we're in the university setting hearing all these grandiose ideas but then when you're a teacher and you're in the building and you have to face these realities...

Lindsay recognizes the lack of effective leadership in her school. She observed that after having been a teacher for more than ten years, the school leaders have undermined her sense of teacher’s professionalism and confidence. However, she offers to lead a group of teachers in her school to build trust among her colleagues. Linda also states that:

> It is so hard to ask for help. There's a certain amount of having to play the game. I've been struggling with that. Other teachers are amazing, but principal thinks we have to know everything to keep her off our backs or she criticized everything we're doing.

Linda recognises the need to navigate in troubled waters. At times, teachers need to “play the game”. Wanda reflects with Leonore, Karin and Alex:

> Wanda: I'm really thinking about the difference between power and authority. A great leader has authority but is not preoccupied with maintaining his or her own power. I think as teachers we get caught up in our own power - want to maintain our control. A great leader is not afraid to be vulnerable and say what they don't know. I avoid conversations with my principal.

> Leonore: In my favorite book, *The Courage to Teach*, Parker Palmer says power comes from the outside and authority comes from the inside. Because you're given a position of power does not mean you have authority.

> Karin: I had a break through. Until then I had been working individually. I am part of the literacy team. At my school the team is led by my friend who is a real visionary. What she is working on is working with instructional coaches. I love that it works with my thinking. It provides an opportunity for teachers to work together. It's about teachers working together. Talking about observations. It's fantastic. It's great. (teacher work) needs to be teacher directed. All of those are at work.
Alex: A great school means great teachers. The next most important factor in a great school is a great 'leader'. But what happens when 'leadership' gets in the way of teacher collaboration?

In this dialogical segment, several aspects of leadership as techne emerge as something that can be learnt from the ground up, purposeful, a way of doing things in schools. Teacher leadership is shaped from the very voices of teachers. Moreover, that some teachers like Karin are ready to assume roles of leadership despite the difficulties and recognize that authority and power are not always aligned in the school: it shows that it is possible for a teacher to become an authoritative reference in the school, grounded on her capacities and decision making.

Pedagogical content knowledge as techne knowledge

Teachers related narratives of classroom teaching, mostly related to how they taught. The peer support and sharing of teacher knowledge is recurrent in teachers’ lives, as Lortie argues (1975). In the case of sharing procedures, Hilda and Norah reflect:

Hilda: Rather than sitting down writing, what about podcasting? You know, just talk about what we're going through.

Norah: I'd love some time to speak about where do we bring those podcasts, those journals … we're missing the action piece.

Hilda: Well, I wanted to share a conversation with Tabitha about this - Julia (...) was sharing her technology websites. I remember she was sharing LiveBinder. Last week I decided to be all revolutionary. I tried the LiveBinder. I created 6 binders: online, you can upload docs, etc. I said my portfolio is digitized. My supervisor was blown away. I told her I learned it from this VPLC. [I told her] You can keep all your private stuff there, or you can turn it into a collaborative tool. I can put up my shelf on the VPLC.

The conversation between Hilda and Norah expresses how teachers share knowledge. Hilda gives public appreciation of having learnt what she knows of this IT resource from Julia, but she also tells Norah how and what she can do with this tool. Hilda is both learning from an individual and then sharing with others the IT knowledge she learnt herself. In analogic terms Naomi, expresses her perspectives:

This group helped me with technology… this whole idea of 21st century technology! I wanted to use it more. I wanted to go beyond of only using Power Point and Prezi! I am really keen to the idea of doing videos. I am moving to a new school and I am getting an iPad. I am taking an EQ course on incorporating technology in schools. I am really
excited about that. Now I know how to use technology more than before. I don't want to go on with the textbook stuff. I want to use technology for all of them. I have gained my confidence, thanks to you!

She shows indebtedness to the PLC for instilling in her a confidence in working with IT resources that would boost her practice, mostly because it seems that leaving behind materials such as text books would appeal more to students’ needs and interests. Naomi adds:

I am teaching language arts. If we move the lesson away from boring exercises, it's interesting. I asked the kids to write about a theme - a childhood memory. Don't think of grammar. You have to finish it in 10 minutes. Some kids said it was very difficult. Pretend you are a camera making a movie... now it's not only about a story, but it's also about detail. Then they edit each other's story. And I am also learning so much myself!

She enhances an understanding of PCK as techne by adding the element of how to teach languages in ways that for her are unorthodox, “away from boring exercises”, mixing IT experience with the appropriate elements to generate student learning evidence through peer assessment. Hilda adds:

I have Criminal Law classes that I teach and they’re large, they’re 32, and because so much of it, it is discussion. And I’d tell them: “Don’t raise your hand. I’m going to give you think-time and then, after about 2 minutes, if you think you’ve got a good response and it is kind of in your head, just raise your hand”. And I’d watch hands go up. Then the students know I’m not just going to call in the students with their hand up, anybody, you know, provided them the space to think. So it’s just this idea that they need to… really can bounce ideas, bounce the perspectives of their peers. And they’re more willing to share out. Now, this is a high-school level but I think that it probably can work well in year 4 and 5th grade too.

Hilda describes how to generate participation based on student’s reflection that encompasses: a) an understanding on the social construction of knowledge among peers; b) the discussion of the content based on students understanding of it, and; c) the shared construction of answers that address complex thinking, where students need an extended time to think. Naomi and Hilda provide evidence of teachers developing techne knowledge associated to actual teaching by means of providing students resources and access to knowledge production or acquisition.

In this section PCK appears as the procedural aspect of teaching. It reflects the theory of teaching that lies underneath the teaching actions. PCK thus appears so far as the knowledge itself needed
and learnt to work in cultural preservation and transformation. It is in the *episteme*, and also in the *techne* of teaching, something to be known and learnt.

**Phronesis: The moral, the ethical and the political for wise teaching**

Participating teachers discuss moral, ethical and political issues of their everyday activities. These three aspects represent the core of *phronetic* thinking and portray the connections of teaching with “wisdom” and “prudence”, words used in attempts to translate *phronesis* into English.

**The moral and ethical knowledge of the teachers**

Moral knowledge development is represented as the perspective on past events learned to generate future responses to events and actions. Linda says that “it has taken me some time to settle comfortably into this self-directed, learner mindset. There is safety in not stretching, teaching with the doors closed and working in isolation”. Linda judges her own past actions and seems not to be comfortable with them. After gaining a new awareness, she says she is more at ease, and it is possible to assume she has established a position related to her actions. Leonore adds:

> After seven years of top-down professional development in Ontario, I am convinced that the “missing link” in improving student achievement is valuing and trusting the identity and integrity of teachers. By examining the approaches, view and attitudes of those involved, we will hopefully get a clearer picture of where to go next.

After analysing her Ontario PD experience, Leonore proposes building more morally acceptable *modus operandi* in improving “student achievement”. She produces value-laden norms or principles to be shared, such as considering teachers as professionals that carry over to their professional identity such as integrity which relates to a *phronetic* perspectives.

In seeking the good, teachers look forward to improve their practices. Linda asks: “This is about the whole child and the role of spirituality in the class. What does that mean to a student and how are you going to approach it?” The teachers’ conversations discussed below pursued an “ought to be”. The discussion carries the embedded ethical question of approaching an issue at the level of a student who requires the necessary care to succeed.
Ethical knowledge is applied to students, and in the work with colleagues. In this respect, Erin states:

Here's the dilemma: how do I support department members with their failing students? There are a number of students failing in grades 9 and 10 in our department, many of whom are at risk students, have IEP\(^4\), and/or are English Language Learners to varying degrees. (…) Why not pose the problem of a low class average to the entire class and see what they say? Perhaps these are the kinds of things we need to be discussing at heads' meetings.

Erin tackles the problem of teachers who tend to see students’ academic failure as normal or a natural outcome of work in school. Erin is not indifferent to the effects of failing students, and she proposes an alternative to help teachers in recognizing who students in the classroom are, to help them to succeed in a system that for many is not easy to navigate.

Moral and ethical dilemmas regularly emerge in teachers’ discussions. They represent the unease of teachers working while solving problems on-the-go. Erin points out:

We still have mandatory exams at the end of each course, even grade 11 “Parenting”, and when they get to the exam they're like we have never seen these questions and I feel like I am doing them a disservice if I am not preparing them.

Hidden or open teaching-to-the-test requirements create tension for teachers in the moral/ethical aspect in ways that, as in Erin’s situation, generates doubt about their professional commitment when the expected outcomes are not achieved. The same tensions appear in Tabitha’s setting, where she makes the dilemma explicit:

I had the football coach across the hall. I can't get that all the football players are taking physics, but all getting passing grades. Players are being taken out of class to meet recruiters. Finally, I said ‘Hey! here's your choice: if you attend the meeting with the recruiter, you get an F for today’. The principal and coach were POed [pissed off]. Bummer. Choir or football are not tested. English is. If you are present, and you are on task, you are participating. If you are not present, you have not participated. I had a girl who wants to go away with her family, but I told her to do the math. She will lose points.

Evaluation, assessment and testing clearly relate to the ethical and moral dimensions of teaching. Tabitha discusses the position of assessment/testing in her classroom and how she needs to deal with alternatives such as students’ club participation. Whatever emerges requires blending with

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\(^4\) IEP= Individual Education Plan, in Ontario.
curricular requirements or external mandates for teaching. Student evaluation links to school outcomes. Indeed, it constitutes, in teachers like Erin or Tabitha, the ethical and moral boundaries of teaching. Classroom and time management situations also create ethical tensions for teachers. As Norah explains:

I'll go. This is a little gloomy. I will feel like a fraud if I don't talk about it. The fall is brutal. I have no connections with the students at the beginning. You don't know anything about the students at the beginning. There is no breathing space. I have a co-opt student working with me, because I have so many different levels. There's a strike coming. I'm angry. I wanted to publish this year, but I couldn't, as feel as I would be fraudulent. I've had to take choices away.

Norah employs an ethical perspective to critique her choices and how she has entered in the loop of neglecting her legitimate purposes after a depressing start to the year. She questions the morality of her choices calling herself a fraud and being fraudulent for not having complied with her own academic purposes. Teachers also question the ethical value of policies, as Lindsay critiques:

They (the Ontario government) is interested in the secondary level, in generating data. They will get rid of the data in two years because there are so many researchers. They don’t know that it (testing literacy) (…) is different for a student who were born and have been growing up in Ontario than for those who moved from Iran or outside of Canada in grade nine. These (literacy) tests are mostly culturally based. Do not have language purpose. It is unfair. And the government is struggling to defend it.

Lindsay questions the morality of a test that fails to appropriately observe students’ language acquisition. She implies that the need to generate “data,” is informed by the educational policies. Consequently, for students, testing may promote a sense of failure, particularly for new immigrants.

In sum, value-related knowledge appears to be the most intrinsic aspects of phronetic knowledge. Such knowledge relates to the aims, hopes and desires of the teaching profession. Phronesis knowledge captures the traditional concepts of “the beauty, the goodness and the truth” of the profession, and teachers declare such knowledge and its quest through their voices.
The political knowledge of the teachers

Politics informs and affects teachers. Teachers in this research demonstrate both an interest in denouncing abuses of the system, and in proposing alternate ways of practicing teaching. Erin, Mary and Tabitha reflect:

Erin: Where is Amy?

Mary Kooy: Couldn't get the day off.

Tabitha: Really? That sucks (sic)! The risk is that Julia and Amy will be treated very poorly. It happens all the time in our district: if people don’t like you, better watch out!"

The teachers feel the absence of two teachers. Moreover, the fact that the colleagues had not been allowed by the local authority to participate exasperates the teachers. They even anticipate unprofessional treatment by the authority. Lindsay comments:

What Alex says resonates in my case in high school, we meet only once a month, having such a diversity of needs. French generates a lot of funding to school, that is money that is not spent in the school. They don't provide us with those figures.

When funding and resources are not allocated to what Lindsay considers morally necessary, she addresses the challenge that teachers have limited time to meet and work together. She argues that this situation is created by funding decisions generated by her department. She indicates a transparent intention to unveil unclear issues, but also expresses despair because necessary information for ethical decision making is not transmitted to teachers. Lindsay comments:

Yeah, a community is very important for us. We have a love for the subject and this is a growing program, our principal is very proud of our program but we don’t have support, we've done all on our own and the kids just love it. I can’t envision it right.

Lindsay is aware that it takes more than the principal to feel politically safe in a school environment. She implies that no matter what teachers do, support for their professional development will be precarious.

Alex describes a dilemma that she and her colleagues “are struggling with. How do we take our power back as teachers? What does this mean for student learning? How do we take our power back?” The teachers’ discourse reflects their knowledge of how politics help or interfere with their work, and they see that there are alternative ways to stand in front of the lack of resources
they face to perform the teaching activity, and to do so beyond the minimum required. Alex suggests that the way teachers may get power back is through spending time together to broadly discuss teaching issues. In this respect, having the meeting led by leaders they do not recognize results in meetings that are just gatherings, rather than professional meetings.

In this piece of conversation, Lindsay, Hilda, Norah, and Alex discuss and shed light on this issue:

Lindsay: In my school, a small group of us, decided to take back the PD meeting. We're taking about territory. It's a risk. What is it about us, that we don't take back the power?

Hilda: Yes, I brought this up at one of our department meeting. I asked some teachers: why won't some of you step up?" Most people feel fear and that bothers me (…) This is what I am realizing more and more that my principal is nothing more than a middle manager, they need the job and many of them are not going to rock the boat for this simple reason. This is just the way that it is.

Lindsay: We are expected to do PLC's on a regular basis. The principal won't let us meet during PD time - just on our own time. I call these meetings my headache meetings. They [the school] is not willing to give us the time.

Norah: I'm completely disengaged in my forced PD. So what I started to do is record the actions I do: I have kept track of all the things I do: I doodle on my desk, talk on the phone, I roll over my eyes, I think on the things I might be doing this evening, I write notes to my neighbors, I read. I sight, I cross my arms, I check out the smacks I play with my phone and I realize that this is a very unprofessional behaviour what also happens to students who are disengaged. I have a huge advance. The difference is that I know I am intelligent, I know how and where to learn. These kids don't.

Alex: Reflection is such a powerful tool that teachers used all the time in learning, but I'm quite amazed at how under-utilized reflective practice is used in the types of professional learning opportunity that are provided for teachers. Reflective practice is a powerful tool that can be used to engage teachers in learning. It fosters collaboration, it is exchange, it is asking questions, challenges assumptions, listening, learning and trying new things out. A lot of my learning, growth and changes that took place occurred as a result of my engagement with the teachers in this research. Let teachers do what they were hired to do!

Teachers suggest “subversive” activities such as boycotting mandated PD meetings, and using reflective activities to resist the fear they feel exists in the professional milieu. This dialogue reflects a desire for freedom in a highly demanding system—specifically for becoming freed from traditional PD and other top-down mandated directives. The need to recover freedom and
voice relates to the improvement of teachers’ working conditions as well as for students’ scholarly needs and learning. As Lindsay points out:

It's been crazy recently. So... it's been a roller coaster ride. The union issues, dealing with the contract imposed. I’ve been thinking about my role as an educator. The banning of extra-curricular is difficult. It makes you wonder what you do in your classroom. I am providing students with choice and equity of opportunity for courses. Now the students can select their own courses. [Now they can take French. However, the admin] thought is that ‘they are newcomers, they can't learn French’.

Lindsay’s strong commitment to supporting student learning lead her to describe two problematic situations arising from the wider political situation that affect her classroom teaching: first, she cites the ban on extracurricular activities, made by the teachers’ union of the province with the purpose of protesting against government financial policies affecting education; and the second are the prejudices against newcomers’ ability to learn French. She says that these two situations make her feel as if she is on a roller-coaster of instability provoked by the larger and the local educational administration, and that affects her own representation as a teacher, and affecting eventually the activities of the rest of teachers and students.

On a different political note, Tabitha states:

So the state of Michigan is worried for our students. Because all the personal information of our students will be delivered to Bill Gates’ database. I don't know whether I am reading the wrong newspapers, or I am thinking on the side of the liberal or whatever, but right now we have studied years to teach in a different way, learning how to help our students think how they read and write...which is great. But the state may not accept this type of assessment, so we may go back to ACT, type of pencil paper testing...”

Tabitha discusses a testing software that was being debated, which creates a sense of uncertainty for the future. She shows her understanding of what has caused changes in the teaching work in her state. She recognizes that the lack of dissent by teachers concerning education may allow or reinforce wrong policies, impeding the goal of quality education. Alex states:

We found our voices - now how we let our voices be heard. (…) It is time to let teachers begin to have authentic conversations about their practice and about student learning. I think the success of our students depend on this. It is redundant to expect teachers to educate students and teach them the skills associated with 21st century learning if we are still making choices of the types of professional learning teachers need to be engaged in. Teachers need to be provided with the tools to engage in their own self-directed learning if we want to develop teachers that are critical thinkers and reflective practitioners who
are willing to make changes in their practice to support students’ needs. It is important to realize that change cannot be mandated, or it cannot happen from the top down.

Being politically knowledgeable means moral and ethical reasoning, seeking the best possible ways forward for teachers and students who are the “most affected and the least consulted” (Kooy, 2015). The research teachers possess political knowledge in knowing the broader context of what is happening in the media, in the public, and in the country to inform and make the best possible decisions for helping students, communities and teachers pursue and achieve high quality education. In this respect, *phronesis*—the knowledge that articulates prudence and wisdom that is related to politics, ethics and morals—drive teachers’ options and decisions that clearly resonate in the teacher voices.

**Constructing moral, ethical and political awareness in teaching**

In this research study, teachers express that improvement of teaching and knowledge development links to the construction of personal and professional awareness. Wanda states:

> Conventional PD models typically do not appropriately address the needs of teachers. Many of us are so accustomed to this truth that we don't try to change the status quo. Or, we've lost sight of change even as a possibility - as was demonstrated when Leonore's teachers could not answer the question, "What would you like your PD to look like?". (...) As an individual participant, the work I've done with Mary has transformed the work I do in the classroom. It has dramatically changed how I perceive myself as a professional educator. It has given me the strength to challenge administrative edicts that are clearly misguided or unnecessary or insulting. It has reminded me that I have power over my own actions, and that I can make a difference in the places where a difference needs to be made.

Awareness comes from critical self-knowledge as a professional. Wanda describes her learning as transformation that led to improvement of her teaching. Her self-perception eloquently contrasts the responses of Leonore’s teachers unable to identify better alternatives to top-down PD. Wanda continues her narrative:

> Here’s something obvious: it’s only through first supporting myself as a human being and an educator that I can be in a place to support my colleagues and students. This has been the most crucial piece of information I learned. I really hope to work in an environment that has excellent leadership someday, so that I can not only do well at my work, but thrive in it. Until then, I will continue to make the changes I can make in the places I can make them.
She focuses on herself as an instrument for change who needs to be cared for. Moreover, even without external support, Wanda declares her willingness to act with agency using the knowledge that comes from critical awareness. Tabitha provides another example of how awareness and knowledge are intertwined:

What we need as teachers differs as we progress in our journey. I truly enjoy meeting with and learning from other teachers about all aspects of their classroom presence and curriculum. I don’t think that there is a stated pressure to be exactly like others in personality, but the conflict seems to be “teach this, at this time” and do it however you want but the test is “this.” That conflicts for me. “Do everything the same way at the same time, but don’t worry about being the same”.

Tabitha in critiquing practices becomes aware that: “Newer teachers need support for time management, and some ‘how to’ ideas about keeping their classrooms manageable. More experienced teachers need new and fresh ideas for curriculum and teaching methods”. Tabitha is aware of reinforcing teachers’ need for space to develop and grow to cultivate understanding. The teachers develop a (critical) consciousness; that is, an understanding of their reality that helps them to become professionals who make a difference in their work.

**Teacher learning: The complex nature of teachers’ knowledge**

Evidence of teachers’ complex thinking is recurrent in the data. In this chapter, I represented the knowledge created and expressed by the teachers under the three Aristotelian categories that act as framework for understanding teachers’ discourse: *episteme*, *techne* and *phronesis*. However, the knowledge teachers build is more complex and overlaps the existing boundaries. Indeed, these categories are often impossible to separate out. In their interactive dialogue, teachers often simultaneously use multiple categories to analyze their work. Evidence exists of interconnections between *phronesis* and *techne*, between *episteme* and *techne*, and between *episteme* and *phronesis*.

A second area of complexity in developing teacher knowledge comes through questioning. While questioning has been a feature of teaching for centuries, teacher questions teachers often relate to recall subject matter content. Teachers in the study move beyond the literal to produce questions relating to the complexities of teaching and how to make sense and meaning.
**Phronesis and techne:** Teachers weave and blend the *phronetic* “wisdom and prudence” with others related technical aspects, its “art”. When teachers discussed PD, for instance, they connect *phronesis* and *techne*, as in Norah’s explanation:

> I would just be planting that seed. My school knows that I don't like [typical] PD. It could be as simple as saying: This is where I am once a month; everyone needs a different context. This is PD that works for me.

At the same time as advocating for “PD that works”, Norah expresses her political stance regarding the administration of teacher professional development, arguing for alternative PD that considers her profession and adulthood. Her desire is to be trusted like other professionals. Norah elaborates:

> Holistic education leads to deeper critical thinkers and academic success. How will I know? I am confident that I am already there. I need to make a new list of the whole person. I need to think more about what is the whole child. My goal is that my students will make healthy choices, be agents of change.

Norah proposes a new model for developing teachers in their careers using the perspective of holistic education; that is, considering the whole person, the whole child, to make the right decisions. Norah proposes a profound *techne* approach to provide a new kind of education for wiser, *phronetic* teachers and students.

Naomi, similarly, connects *phronesis* and *techne*: “I think the problem is that admin is creating the agenda. Teachers need to create the agenda. If you can’t, ask the kids. Where do you need help?”. Naomi describes administrative agendas as conceptually biased, upside-down, expecting teachers to apply technical strategies to resolve professional issues. Her *techne* tool focused on student-centered learning as teachers facing problems to be solved would say: “Ask the kids”. Naomi, believes her students already have wisdom, the *phronesis* knowledge, to determine their learning needs, as much as teachers can determine what to learn in professional settings, which at the same time is a way of doing things, a *techne*.

**Episteme and techne:** The articulation of *episteme* as intellectual knowing and *techne* as a way of doing things reflects a purpose that implicitly underlies teachers’ words. Karin’s comment: “I go randomly to new books and journals. I read. I take notes. I have so many interests. This is what's difficult. There is so much to read”! demonstrates her concern with learning from reliable
sources with academic integrity. By “randomly” going from new books to journals provides evidence of embedded episteme and techne knowledge. Such knowledge also emerges when Norah explains:

Linda, we did some lessons with the grade nine. We drew from the aboriginal concept of centering yourself. Some of the grade nine could talk about physical wellness, but spirituality - it was a nebulous concept for them. I think it really needs to be explored, and it would be interesting to see what we find out. Could it also be taking the time to eat your snack in class - enjoying it and refueling and learning to care for your body.

Norah problematizes critical thinking with students in grade 9. Her narrative involves both epistemic and techne knowledge. She includes traditional wisdom including physical and spiritual wellness and proposes a way to explore and discover answers to complex issues related to problems among adolescents. Tabitha explains:

In the past two weeks, we looked at how is Macbeth the same as us? We did quizzes, watched films... Students get to associate with the stories. I love the last two weeks of school. It was like a workshop.

Tabitha weaves intellectual virtues (episteme and techne) across the curricular requisites to access to cultural knowledge or assets such as Macbeth.

Episteme and phronesis: An intersection between episteme and phronesis arises in an intervention by Alex:

If we don't lead, where is it going to change? Great leaders are in the classroom. It's taking that risk to say this is what I believe in, this is how learning happens, and this is how we engage students. The whole idea of test, test, test, is outdated, even if I had wanted to test my grade twos, I can't: they can't write; but I have to access their learning. What they can do is speak, so I have to invent ways to reassess student learning. Not everybody learns through writing something on a paper.

Alex adds a political approach to leadership to her specific knowledge of assessment and evaluation in a classroom, which is derived from her teaching. She urges herself and colleagues to take a stance that is based on a new concept of leadership for student learning. This new approach mixes episteme and phronesis, boldly critiquing the purposes of current educational policies (teaching to the test) and confronting it with an alternative leadership concept that puts teachers and their knowledge from the classroom amid pedagogical decision making for change.

Tabitha continues weaving episteme and phronesis:
(then I told my students) “my least favorite phrase is 'Is this good'? My job is not to grade your paper and then give it back to you for you to fix it”. For this unit, I told them “I just want you to try some new things, to risk as a writer, to risk your writing voice, and to make some associations by stepping out there”. Some kids floated away with joy because they did beautiful analysis. I couldn't believe it and I am going to keep them all (the students’ work).

In assessment, the teacher judges the quality of student learning. Tabitha demonstrates how it is possible to help students using teacher wisdom in achieving good quality learning for the curricular knowledge that needs to be learned.

The community in dialogue by questioning: Complex and integrated phronetic thinking

There is great value in the dialogical construction of knowledge through questioning (Meyer, 1980). Questions reveal the intellectual work of the questioner in the context of a community that places dialogue at the centre of their collaborative learning activity.

The teachers’ questions below demonstrate that all three Aristotelian categories overlap in questioning: For instance, Erin asks: “Should a student have the chance to improve a paper?” Her concern on the surface is epistemic since paper writing is a way of assessing students’ knowledge and skills. At the same time, the value that lies within this question, its phronesis, relates to the chances students have to demonstrate their knowledge, questioning objectivity in evaluation, and fairness related to the rest of the class. Beyond the obvious interest in student learning, Erin addresses, in this question, the value of appreciating individual needs within a specific context.

Karin’s question, “I talked to my teaching partner about audiotaping our collaborative conversations… why isn't there a bigger body of literature regarding working with teachers?”, addresses a practical, techne, approach to teachers’ work, such as creating podcasts of her response to the writing. At the same time, Karin expresses again a phronetic (political) approach to the problem, noting the failure of academic literature to address problems relevant to teachers.

The teachers discuss their conceptions of success. Linda asks: “What does success look like for our most at risk/in risk students?”. Linda expresses values of care and compassion regarding the most vulnerable students in a class. Her concern is about access to, and expression of, success. Again, a practical (techne) issue is phronesis-centred.
Teachers in their questioning and dialogues represented their thinking or sought conceptual clarification to gain professional knowledge. The knowledge they created reflected all three of Aristotle’s intellectual virtues of *episteme*, *techne*, and *phronesis*. The categories represent thinking and knowledge of teachers as intertwined, portraying their abilities to engage in complex thinking.

**Reflections on the Chapter**

In this chapter I demonstrated how the research teachers develop three types of professional knowledge based on Aristotle’s three virtues of intellect: *episteme*, *techne* and *phronesis*: *Episteme* as theoretical knowledge; *techne* as procedural knowledge, and *phronesis* as wisdom and prudential knowledge.

Under *episteme*, I showed how the teachers developed an awareness of taking on the role of intellectuals, validating their decision-making processes through the production and use of reliable knowledge. They seek recognition as legitimate knowers able to understand and use data as well as address the “power-knowledge” relationship. They criticize and propose innovations in professional development strategies, for instance. The teachers became theory producers of teaching, their professional development activities and their perspectives on PCK.

The teachers developed critical consciousness of their varied roles in school. They generate thinking on the way teachers meet in schools. For example, in a PLC they collaboratively create knowledge through dialogue. PCK has his *techne* side as long as it is related to a way of teaching and the generation of student success.

With *phronesis* knowledge, teachers develop moral, ethical and political perspectives, mostly related to understanding the larger context of education including its purpose and the teacher roles related to consciousness and wisdom.

All three knowledge types are presented separately, albeit teachers blend them. The last part of this chapter reveals the three types of knowledge interacting: predominantly as phonetic that helps make sense of teaching beyond the external mandates and obligations of teaching.
The knowledges teachers produce within the PLC emerge as teaching issues appear in the discussions. The various trends and the commonalities that arise, constitute a kind of *basso continuo*, if this was music, a permanent bass tone that accompanies the main images and figures. As such, few topics would remain in teachers’ conversation if an eidetic reduction (seeking of the essence of a phenomenon) is performed, as I introduce the next chapter.

In the final chapter, I elaborate an interpretation of these aspects as ideas that bridge the research questions, using teachers’ reflections and voices to generate a typology and description of teacher knowledge and teacher learning to understand, in more complex ways, the intricacies of teacher thinking and of teaching.
Chapter 5: Conclusions

This research has revealed distinctions among forms of teacher knowledge that, for those who are not involved in the intricate meanders of the teaching profession, would be difficult to recognize (Kooy, 2015). In this study, I have explored those walkabouts to find aspects of the nature of teacher professional knowledge (TPK) that makes it *sui generis*.

The exploration involved four years of attentive listening to the voices of 14 teachers—in person, on video, and recorded in discussion transcripts and online commentaries. These voices resonated in my mind as I re-read them. During the writing of this dissertation, the Nobel Prize of Literature was awarded to American songwriter and poet Bob Dylan. His poetry helps me to find the clues to answer “what is the nature of teachers’ knowledge?” Dylan’s response comes back from my youth: “The answer, my friend, is blowin’ in the wind” (Dylan, 1963, track 1). An answer is available for those who can and want to listen to the wind produced by the voices of teachers. Their voices reveal several aspects of the knowledge they have created about teachers and teaching. Their voices open the pathway for answering my questions and concerns about a system that often does not recognize the knowledge and wisdom embedded in the teaching profession (Kooy, 2015).

The submergence of teacher knowledge does not disavow its existence. I have heard that “discourses are not facts”, that “words are not deeds”, but it is also possible to say that “the mouth speaks what the heart is full of” (Luke 6:45). I trust a discourse that is sustained solidly and has grown over a number of years. I believe in the performative capacity of the spoken word, its power to create realities (Austin, 1962; Searle, 1969). Drawing on the Latin saying “*verba volant, scripta manent*” (while the spoken words fly, written words remain), this thesis/dissertation helps to consider those words, now written, as enduring facts.

In this final chapter I address the problem of the nature of teachers’ knowledge. I examine the knowledge specific to teachers developed in a specific professional learning community. My examination is based upon the two research questions I posed in the Introduction: What types of knowledge do participating teachers develop over their participation in this PLC? and how can the types of knowledge of participating teachers inform professional teacher learning? In the first
section of this chapter I address three key findings of this research that answer my first question, explicitly related to the Aristotle’s categories. In the second part of this chapter, I present two findings that answer my second question on how professional learning is informed by teachers’ dialogical and questioning activity. In the last part of this chapter, I consider the significance of the study, and propose guidelines for further research on teacher knowledge.

A typology of teachers’ knowledge built from teachers’ discourse

To the question “What types of knowledge do participating teachers co-construct over their participation in this PLC?”, I have found that teachers develop three general types of knowledge. These types of knowledge are described in Chapter 4 and inspired by the literature review in Chapter 2. These knowledges are transversal to the work of teaching. The typology of knowledge I propose is based, largely, on the intellectual virtues articulated by Aristotle in the Nichomaquean Ethics (2011): Episteme, Techne and Phronesis. These categories represent teachers’ activity, and they honour the complexities of teachers’ work which encompasses the multiple faces of teachers’ professional knowledge, learning and work.

Finding 1: Teachers co-construct epistemic professional knowledge

Teachers participating in this project challenged a number of concepts and theoretical constructions that are central to teaching and its practice through their conversation and discussion processes. Many ideas that the teachers produced and discussed about their teaching necessarily emerged from the notions of the fundamental concepts (Engeström, 2001) they used in their daily practice, such as learning. The learning that these teachers represented and discussed challenge behavioural, mechanistic models of curriculum and learning—what Freire (1997) called “banking education”. Instead, they promoted learning that helps to understand and transform the realities that students and teachers confront every day. This is transparent when Naomi shared her strategies with video recording to generate in students and parents a representation of students’ learning. Norah expressed this in a more vivid way,

I am incredibly disappointed with this perspective [traditional PD] because it is based on the assumption that teachers will not learn unless it is forced, and it reinforces the belief that authentic learning can occur under such conditions. I am struck by the imagery of
plugging a child’s nose in order to force their mouth open so that food can be forced down their throat.

The teachers also challenged the commonly accepted notion of ‘data’ as hard, measurable, ostensibly objective evidence, and its use for the purposes of policy making. They challenge this notion with two powerful arguments: that authentic data are far more than quantities or figures beyond teachers’ control, and that meaningful data are also necessarily based on domestic or quotidian experiences that are under teachers control. Such a perspective emerged when Hilda questioned if data are really out of teachers’ control, to which she responded by asking to embrace true data, to lead transformative praxis. Furthermore, the entire notion of evidence is contested when these teachers re-conceptualized data, pushing the boundary beyond naïve notions of its definition.

By challenging notions of data, these teachers disputed the commonly accepted position that those who are the creators of theory and evidence are found only in administration and academia. Pinar and Grumet (1976) argue that teachers working on the periphery of the academy produce their own theories about curriculum and teaching, which coincides with my thesis findings about the teachers in this PLC project. Teachers in this study discussed the fact that they develop theory through the explication of a phenomenon or through articulation of ideas. Further, they articulated the complex relationships teachers have with ‘theory’, as shown in Norah and Alex’s conversation where they discuss the chances teachers have when debating theory and creating teacher judgement. In particular, they expressed/voiced this complex relationship with theory by being recipients and users, or users and producers of theory, very much in the ways hooks (1994) describes.

Teachers and academic theory-producers usually exist in a top-down relationship within the confines of power in the school system (Clandinin & Connelly, 1999; Cochran-Smith & Lytle, 2004). However, I argue in this thesis that teachers’ evaluative judgments correspond to a metasituation that encompasses their own theorizing, based on their activity. This occurs considering contexts and future possibilities (Pinar & Grumet, 1976), positioning teachers’ thinking and decision-making within the frame of theoretical activity. Thus, teachers’ evaluative judgements destabilize this top-down relationship.
The teachers created and used theory, where “theory” is equivalent to wisdom of practice based on professional contemplation (Grumet, 1989). I consider this professional contemplation as an intellectual approach to decision-making. Thus, for teachers, theory making takes the profession beyond the conception of teachers as technicians or appliers of a curriculum created by others. Rather, the teachers were continually thinking through and enacting the situated curriculum. Norah made the point in this respect when she invited her colleagues to imagine different visions to schooling and curriculum implementation.

The epistemic knowledge present in the teachers’ discourse rests within the nexus of knowledge and power, which is often unfairly balanced against teachers (Haraway, 1988). The relationship between knowledge and power—and the agents who are seen as knowledgeable “power holders”—is critical in the context of development, testing in practice and refinement of new theories. Participant teachers in this research demonstrated this power-knowledge relationship and challenged assumptions too often taken as truths by media and interested parties, such as that “those who know, do, those who can’t, teach.”

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This research indicates that participating teachers carried intellectual-cultural assets whose management requires theory, or theory making, in terms that every teacher’s needs a theory and a body of knowledge in order to teach. For instance, a teacher who teaches grammar without a (explicit or tacit) theory of communication. A comprehensive and relevant study of grammar can connect students to the concerns of cultural and social communication. Such theory is not just about a borrowed conceptualization that would allow teachers to teach students, but rather a whole view of the world that enables a teacher to teach authentically, understanding the role that grammar occupies in the structure of a language. In handling and managing such intellectual-cultural assets, teachers are knowledge workers and cultural architects. Teachers generated thinking beyond their subject matter. Teachers generated thinking about their roles in the educational system and the classroom, and the relationships they developed to improve student learning. For this purpose, teachers applied and enacted their own holistic beliefs and representations in addition to knowledge of specific issues, as discussed in the literature (Borko, 2004; Kooy, 2015: Shulman, 1986) Norah’s comment illustrates this idea:
After I realized that she (the PD lecturer) wasn’t really listening to me, I tuned out. (...). The education system often insults your intelligence, as well as my own. We tackle education as if it were only our duty to nurture your academic side and as if your academic identity is somehow isolated from your soul.

Teachers who are aware of their agency/ownership in professional teacher knowledge and learning can be valid interlocutors with those who provide teacher education at any stage (initial or in-service). In this thesis research, participant teachers provided insights about the purpose of teaching, whereas deeper theoretical knowledge and more profound thinking about this profession may have been neglected in their earlier teacher education.

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When teachers discussed *epistemic* facets of their pedagogical content knowledge (PCK), they generated theoretical approaches to their practice to implement curriculum in meaningful and accessible ways for students. This focus was especially visible when participating teachers produced and shared intellectual and material resources regarding their teaching, making connections among ideas, and between concepts and practices, in order to build new knowledge. The evidence gathered in this study also shows how participating teachers engaged in critical reflection, thereby generating new perspectives about their work. This is important because the role teachers play in shaping such knowledge for teaching is often neglected or invisible in the literature on teacher knowledge and teacher learning (Kooy & Colarusso, 2013).

In Chapter 4 I highlighted a moment when Alex felt that her students had motivated her to excel in her pedagogical capacities. First, this showed that PCK must be based not on the subject matter alone or in the abstract, but on what students need *from* school (Loughran, 2012). Second, it demonstrated that a means of becoming aware of students needs and how to better address them is to theorize about specific teaching and learning practice.

Students’ educational needs go beyond the formal planned curriculum, and beyond PCK as an abstract theory. The core of PCK is the capacity to make the substance of subject matter understandable and available for students (Shulman, 1986). However, Alex’s narrative demonstrates how a pedagogy that listens to students’ needs continues beyond that point, in a dynamic cycle of (re-)thinking and redesigning lived curriculum (Aoki, 2012).
One key aspect of the professional knowledge teachers theorized involves the concepts of skills and competencies. Skills and competences constitute some of the new knowledge to be taught at school, the what teachers are required to teach (Marzano, 2000). A focus on teaching skills in school may obscure the cultural dimensions of content and learning. Tabitha problematizes this issue in ways that bring clarity to something that is not yet a discussion in the broader scenarios. The teachers may or not have been aware of the fact that Shulman was advocating for a more cultural perspective on knowledge. The teachers in this study challenged prior perspectives on PCK by suggesting that skills discourse has become pre-eminent in what is to be taught in schools.

Teachers also discussed the position testing occupies in teaching and learning, influencing the place of PCK. When standardized tests results drive most countries’ education systems (Ravitch, 2013), it is reasonable to assume that these tests represent a reduced set of skills and competencies. This speaks to the political importance of the production of and access to cultural capital, meaning the skills and understandings that students supposedly need to have to become educated and successful people. Participating teachers held and discussed together a complex kind of knowledge about the gap between prescribed curriculum and the competences that would be meaningful to their students (overlapping but contrasting bodies of cultural capital). They reflected upon the siege imposed on teachers by an educational system that too often seem not to build on the cultural assets of society.

Notwithstanding participant teachers’ theoretical approach to the problem of teaching and learning, the pedagogic component of PCK existed and the problem of student learning remained. Teachers like Erin constructed a PCK that included a broad spectrum of skills and competences. Participating teachers voiced that it was difficult to capture the complexity in students’ learning when limiting it to only traditional, object-centered teaching and evaluation tools. I argue that a necessary relationship exists between the two sides of school knowledge: skills/competences (procedural knowledge) and content knowledge (traditional curriculum subject matter). In my experience, teachers sometimes hold dichotomized understandings of content or skills in school learning.
Teachers regularly tackled problems related to curriculum design that are usually determined by policy makers, perhaps informed by academia. Thesis findings reveal teachers use their daily classroom activities to re-think, adapt, and design the curriculum. Knowledge of PCK is at the core of such daily teaching, as participating teachers articulated in their discourse.

Finding 2: Teachers build *techne* knowledge

Teachers participating in this research demonstrated that they created pedagogical knowledge and practices in schools, despite the still pervasive representations of teachers as merely teaching (delivering) what is prescribed to be taught. Their teacher knowledge creation was participatory and critical: both students’ learning and teachers’ success emerged from the knowledge teachers developed.

The knowledge the teachers developed was created and supported by the roots of their practice, reflected in the work of Greene (2000) and Nehringa & Fitzsimons (2011). This centrality of the teaching practice is clear when Erin described preparing and delivering teacher directed PD. Such teaching-centred knowledge built compassion among colleagues as Erin said, because it emerged from the dialogically shared experience. This *techne* knowledge is simultaneously an external characteristic (something to be learned) and a way of doing things (already acquired capacity). Indeed, the teachers used dialogical tools and interacted with the feedback from colleagues and students to realize the pertinence of this developing knowledge.

While *techne* knowledge implies a way of doing things, it is not merely a “technical” approach to reality. The techne knowledge observed involved learning and feedback through dialogue in community such as in the collegially-built practice Hilda and Erin presented. The *techne* knowledge evidenced in this thesis demonstrates the benefits of improving-teaching-together. It is based on proposing innovations for handling teaching and learning problems as not-yet-solved. In contrast, traditional mandated PD tends to present fixed ‘solutions’ to teaching problems. Being and learning in a “safe space” for professional learning described by Vanblaere and Devos (2016) —a horizontal, self-managed community of peers— is a radical proposal for improving teacher learning. This is explicitly evidenced in the teachers’ discourse when Lindsay observed that “this time we're much more comfortable with one another. I don't have to worry about what people will think. I feel safe. In the schools, we do hesitate. Here we've established friendships”. 

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The teachers in this study demonstrated the power of their words and worlds, and the power of problem-posing and problem-solving discourse to generate reality-grounded teacher professional knowledge. Participating teachers, through the discussion triggered in the learning community, also became aware of their nature of their profession and of teaching, a knowledge at the centre of the pedagogical relationship. They learned the value of “supporting each other professionally”, as Lindsay said. In the PLC, the teachers created a social place to build and re-examine their own ideas, and elaborate on their opinions and decisions about education and teaching. Teachers felt confident to express their concerns and ideas within an ambience that supported their development of professional thinking based on mutual trust.

The teachers also recognised the growth of leadership capacities as a quotidian practice among their teacher community. They understood their position as leaders in schools. Indeed, leadership as a concept and practice also applied to teachers in classrooms and beyond. Some, for instance, attended and presented at academic conferences and/or published papers.

Teachers like Alex can be recognised as forward thinking visionaries. This conception of leadership contests traditional and common representations of leaders as those appointed to positions of power in the school. The notion of leadership emerging from these thesis findings is a techne understanding. This is, a techne understanding involved ways and means of proceeding in the school, attempting to move the boundaries of the work of teaching towards innovative approaches. Leadership here meant, for instance, that teachers themselves proposed new strategies that seek to improve “whole school” learning instead of complaining about those who lead the school system or the teaching profession. Participant teachers showed themselves as professional workers/thinkers “to be the change agents”, important contributors to the transformations needed in schools.

A final aspect of techne knowledge illustrated by the PLC relates to the use of instructional technology (IT) platforms through discussion and sharing as Naomi expressed so vividly: “This group helped me with technology… this whole idea of 21st century technology! I wanted to use it more. I wanted to go beyond of only using Power Point and Prezi!” The value of technology was not seen as simply following the technological trend, but for the sake of students’ learning.
In fact, IT could enhance school learning, and those who knew about it shared the knowledge with those who did not, boosting teachers’ sense of capacity to teach using IT resources.

Thus, PCK appeared not only as *epistemic* knowledge in teaching, but also as practical, *techne* knowledge. This way of understanding PCK as knowledge for teaching embodied a knowledge and a path to follow to make this knowledge learnable.

**Finding 3: Teachers build moral, ethical and political knowledge**

Despite the long tradition of axiological thinking, today *morals* and *ethics* are understood in almost identically (Campbell, 2003). Both moral and ethical knowledges can be understood as belonging to *phronesis* (Flyvbjerg, 2001). This thesis research illuminates two major moral and ethical themes in the teachers’ conversation. Although these moral and ethical themes do not constitute a large body of evidence, nor do they reflect a pattern, they are included because of their presence and significance.

In my analysis of the teachers’ discourse, I distinguished moral characteristics from ethical knowledge. I presented moral knowledge according to its etymological meaning: from the Latin *mores*, the uses and customs of a society. Moral knowledge analyzes past events and phenomena; the recurrent situations teachers experience to make sense. In contrast, ethical knowledge becomes from Greek *ethikos* > *ethos*: character. Ethical knowledge would be related to processes of character-building (Carr & Skinner, 2009). It can produce a prospective reflection on a value-related problem that goes beyond pure description of the likely event. Ethical knowledge is built upon “seen phenomena” with a lens of situated potentiality (Freire, 1997; Giroux, 1988), seeking to give meaning (and to inform decision making) for upcoming similar situations.

Participating teachers generated phronetic expressions linked to morals and ethics. However, they addressed a general concern regarding value-related issues: they questioned their capacity (and institutional barriers) for involvement and integrity in working with colleagues. Some participants also referenced spirituality, which informs “ought to be”. Here tacit or explicit mandates (moral preferences) related to teaching emerged, as when Erin questioned if she should or not support failing students.
Teachers openly sought to create morally acceptable actions in the school system. Leonore’s use value laden norms regarding improving student achievement, or the ways Linda and Norah included aspects of spirituality to generate moral imperatives related to the wellbeing of teachers and students in classrooms.

Teachers’ analysis of the teaching reality attended to critical dilemmas such as helping or not failing students, or preparing a diverse range of students to write a test. This reflects a phronetic understanding of teaching work. Evidently, for participating teachers, values were embedded in their concerns because they understood that their teaching choices and capacities had consequences, positively or negatively, for particular students and communities.

A final aspect of phronesis knowledge unveiled in the teacher discourse involves the primacy of evaluation and assessment in their work. Teachers reflected this value basis and significance in their thinking and by association, in their work. Teachers did not view assessment (standardized or otherwise) as objective or merely technical; they viewed it as embodying choices with moral significance. They acknowledged the needs and feelings of all students including such students as language minority newcomers.

Participating teachers demonstrated political thinking (as a part of the moral/ethical knowledge), mostly related to representing what they viewed as the mismanagement of the system against teachers and students. Such political thinking was often related to how resources were allocated, the difficulties of teachers in accessing the spheres of power and authority for decision making, or the frequently unfair preconceptions of students’ capacities related to their origin embedded in public policies. For example, teachers criticized public policies (such as mandated traditional-form PD) and even calling for subverting them.

Teachers addressed phronetic (moral/ethical, including political) aspects of teacher knowledge/learning in ways that reclaimed aspects of teaching obscured, ill-considered or even neglected by many educators and educational scholars. An important finding of this thesis research is that phronesis understandings, because of its relevance in the development, appeared prominently in teachers’ discourse.
All three types of knowledges acted together. However, *phronesis* predominates in the form of care and compassion, attentive listening and help, together with exigency and demand from their students for their best. Teachers acquired a sense of justice understood as attending to all needs, sometimes expressed as “should I give this student another chance?”.

**Teacher learning to construct professional knowledge**

The second sub-question guiding this thesis research, “How can the types of knowledge of participating teachers inform professional teacher learning?”, suggests that TPK depicted in this study was dynamic and in-practice (*praxis*), guiding teachers’ actions and decisions. Much of this teacher knowledge may not be fully formalized. Rather, some remains tacit as teachers built their decisions and representations on their evolving understandings during the years of the PLC (and this study). The data demonstrate that teachers wanted to, and were capable of, participating as active agents in school concerns using their professional knowledge.

Teachers’ knowledges were analyzed in relation to the three Aristotelian categories: *episteme*, *techne* and *phronesis*. Identifying knowledge and learning through these domains helps to distinguish and make visible the knowledge that was shared by colleagues. For instance, concepts such as “hidden curriculum” challenges the “objectivity” and partiality of data” in relation to social contexts, and the recognition of teachers’ *in situ* learning of sentiments and intuition were important common understandings that emerged from this study.

Teachers’ knowledge represented in the spoken word implies that such oral knowledge was shared more in informal contexts and autonomous gatherings, more (or more explicitly) than in formal contexts. Listening to teachers speaking in the summer institutes and in the online meetings offered support for the methodological approach to this study: to listen teachers’ voices *de profundis*, in depth. In my methodological approach, it was necessary to wait for knowledge to emerge and develop. The informal talk woven around noisy interactions, laughing, talking about babies and daily life issues inevitably enriched the entries into teaching matters, into education, into professional knowledge. Teachers found it difficult at times to finish their PLC meetings (they frequently wished for more time together). The blending of the dialogues – both personal and professional—provided a safe space to build and test theories and to develop teacher understanding and practices.
The answer to the second research question, “How do the types of knowledge of participating teachers inform professional teacher learning?” appears in the background of this research: teachers’ voices emerged in a space that could be called sacred, where authentic dialogue was invited and facilitated. Teacher knowledge evidenced in this dialogic learning community the community of voices is each connected to and contrasted with the ‘other’s’ voice. The next finding describes the dialogic nature of learning communities.

Finding 4: Teacher learning through professional dialogue

Dialogue for teachers can unveil both tacit and explicit representations and teaching practices. Beyond facilitating the co-development of knowledge, dialogue revealed consciousness and professional awareness (Freire, 1997). In this study, dialogue brought unexplained and unexpected issues to the table, issues that became relevant in dialogue.

Teachers in this research used interactive dialogue to learn from one another. This inquiry process shows how dialogue and conversation acted as a catalyst for developing teachers’ consciousness and professional knowledge. When Lindsay, Hilda, Norah, and Alex discussed bringing back power to teachers into creating new PD possibilities, they wondered how to regain lost territory, to encourage teachers to confront the fear and apply their underutilized reflective practices. Such is the process of awareness and empowerment that is revealed in such interactions. In Bakhtin’s words:

> Form and content in discourse are one, once we understand that verbal discourse is a social phenomenon – social throughout its entire range and in each and every of its factors, from the sound image to the furthest reaches of abstract meaning. (Bakhtin, 1992, p. 259)

Teachers’ knowledge was dialogic in form and in its content. The knowledges displayed and co-created by participant teachers had connections to broad bodies of cultural knowledge ranging from curriculum studies to philosophy, epistemology and axiology while also addressing those issues spanning from the most prosaic to the most abstract. Alex captured this notion: “It is time to let teachers begin to have authentic conversations about their practice and about student
learning. I think the success of our students depend on this”. Authentic teacher development occurs through dialogue giving the concept of development observes its real and full meaning.

Finding 5: Teacher thinking through questioning

Teachers’ questions represent complex ways of thinking demonstrated through reflective dialogue and the ways they developed it. At times, the questions come from despair as when Karin asked for more research on teachers working together, or from the need to understand the unknown, as when Linda asked about identifying success for her at-risk students. Asking generative questions, the teachers sought answers. Norah poses a rhetorical question: “Why is it that Finland (…) does not need to mandate workshops? Are teachers in Finland innately born with a love of pedagogy that our teachers do not possess?”. In their questions the teachers revealed a seeking for actual answers while also demonstrating teachers’ ways of thinking.

The questions also reflected how and what their thinking was about, their values and priorities observed through their questioning. Some questions sought to validate what the teachers already knew, others questioning authentically sought answers, some were rhetorical, as seen above, and still others provoked consideration or debate. Most of them represented a phronetic approach to teacher knowledge, as they were value-driven. Teachers’ questions reflected the complex nature of teacher thinking and learning.

Freire (1997) called these questions problem-posing, a key element towards building critical consciousness. Participant teachers’ questions involved a process of knowledge construction. The continuous state of decision-making embodied in the teaching profession requires professional consciousness as Greene (1975) and Pinar (1976) noted more than forty years ago.

Teacher participants shared questions reflecting the quality of their thinking, their apprehensions and matters of concern. The number and quality of questions posed depicted the reasoning that underlay these teachers’ teaching. For example, Julia’s questions, “How can technology enhance learning? How can I use technology authentically in the class?”: the crucial knowledge component is in the effects of its use on student engagement and learning. Norah demonstrated a similarly dynamic notion of knowledge/learning when she inquired, “What do teachers know about their own needs as learners?” Questions participants posed demonstrated a deep
knowledge of the nature of teaching profession and its implications for students’ and teachers’ learning.

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Significance of the study

This thesis research illustrates the process and effects of sustained dialogic professional learning in a community, introducing an understanding of teachers as knowers, knowing their profession through the discussions of their practice, thereby informing and growing their professionality.

Having teachers informed about their profession may help to dismantle boundaries of professional knowledge as ostensibly universal and derived from the external, locating it as local knowledge within the teacher and her/his professional community.

This research illuminates several important aspects of teacher professional knowledge. It is important to understand the complex notions of pedagogical content knowledge (PCK), and to expand the conventional representations and boundaries of teaching (as only, or primarily, linked to teaching the subject matter) to include the axiological, phronetic activity embedded in teaching and teacher knowledge. Indeed, crucial aspects of teachers’ professional knowledge are relational, contextual, situated, and process oriented. It is necessary to understand teacher development as adult education—thus recognizing and allowing mature agency—either be in initial education or in PD processes of whatever form. Moreover, there is a need for a deeper comprehension of the liminal spaces in teacher development between learning and teaching, between curriculum and student learning, and between mandated and teacher-directed professional knowledge development.

Thus, this research may help to inform a re-orientation of teacher professional development as it offers a bottom-up approach to what teachers know and the ways teachers learn. It also may help policy and program developers enrich their understanding of what teachers’ work and learning is about, to inform new approaches to educational development and improvement.

Finally, this thesis contributes to finding new approaches to the purposes of formal education by inducing a more complex understanding of what development means in human activity.
(Engeström, 2001). Formal education that emphasizes the importance of sociocultural approaches highlights the role of school education in the construction of culture, constructing more complex comprehensions of teaching through multifaceted representations of teacher learning and teacher knowledge.

Further research: Next steps
As this study comes to a close, I envision deeper inquiries into TPK and knowledge development; that is, continuing teacher based, peer-negotiated, bottom-up, PD strategies. Such research could facilitate development of broader concepts and strategies for teacher evaluation, including those aspects of the design of teacher education, and of reflective professional learning that are discussed in this study.

Second, future scholarship could include the role that a multimodal learning environment plays in the creation of specific types of conversations. Such an investigation may alter the depth and reach of authentic teacher dialogue for learning.

A third aspect relates to investigating more specific levels of pedagogical content knowledge (PCK) issues, particularly related to solve the tension between teaching and learning skills and traditional content knowledge. Such a study could examine concepts that teachers have and use in classrooms, which may require grade-based cohorts of teachers instead of the longitudinal K-12 group, which was the focus of this study. Grade (and/or subject matter) based cohorts of teachers working together in professional learning communities would help to elicit richer and more specific aspects of PCK and its development by/in teachers.

Fourth, I also advocate for future research on the role played by gender in the process of teacher professional knowledge creation or development. For instance, the role of gender that may be implicated in my findings, that depicts a type of professional knowledge that are beyond the traditionally considered dominant scientific postures, that include intuition and sentiments. These elements would have been neglected in dominant male oriented constructions of science and knowledge.
Finally, further work remains in illuminating the study of tacit and explicit professional knowledges to understand the ways teacher knowledge is recognized and transmitted in schools and academic settings to shed further light on the way teachers learn, and teach.

**Limitations of the study**

Qualitative research limits generalizability and involves a level of subjectivity in reading the texts and the meanings I drew from them. I make no claim for objectivity nor even I imagine it is possible to perform a similar study under a similar circumstance. Socrates, quoting Heraclitus, noted: “You cannot step into the same river twice.” (Plato, 1997, p.120). In more contemporary words, this study acts as a “slice of life” (Guba 1981, p, 85). Such expression, beyond the poetic image, reflects the nature of this research: it recognizes validity within its confines, opening paths for further analysis that might be common to the teaching profession elsewhere. This research experience was a long-term, evolving professional encounter among colleagues, at a particular stage of their careers. However, realizations from these findings may stimulate a similar recognition that teacher voices need to be central to how schools and teacher education function and change.

**Final remarks**

The findings of this research will contribute to the scholarly literature that considers teachers as generators of professional knowledges for teaching. My inquiry portrayed a typology of TPK, brought to surface from one set of teachers’ ongoing series of professional dialogues. These teacher knowledges are profoundly linked with curricular and philosophical concepts that legitimise the nature and crucial importance of teachers’ thinking. Teachers, educators and policy makers may find explanations for teachers’ ways of approaching their work. It may help in the design of teacher education programs and professional development.

Notwithstanding the latter, one of the most remarkable facts I found is that teachers participating in this study share experiences with teachers in Canada and the USA and probably, even more globally. These teachers demonstrated the profound love and commitment to their profession. Some were more talkative, some more reserved, but everyone had the opportunity to express her voice, increasingly over time. The wonder of this is that as I was listening to them, I would recognise the hundreds of teachers I have met in my life and in a way, finding myself in their
concerns, questions and issues. I hope I have honoured their voices. Teachers participating actively created and enacted the knowledge they needed upon their daily experience. They reclaimed that professional knowledge must be recognized in teacher professional development, although many would have underestimated the value of their own experience as relevant and pertinent professional knowledge.

This dissertation addressed my research questions but also provides a place to close the three episodes in my teaching career portrayed in the beginning of this thesis. I learned that enough knowledge exists among teachers to share democratically; that teaching is more than just teaching a subject matter; and how a widened notion of teacher knowledge may literally have saved the life of a depressed teacher after an official teacher evaluation process. Finally, I advance that there is a proper knowledge of teachers about teaching that can and must be studied as a field itself, with its own dynamics, in the body of the value-laden areas of human studies.
References


Avalos, B. (2009). Los conocimientos y las competencias que subyacen a la tarea docente [Knowledge and skills underlying the teaching work]. In C. Velaz de Medrano, & D. Vaillant. (Eds.). *Aprendizaje y desarrollo profesional docente* [Teacher learning and professional development] (pp. 67-78). Madrid: OEI- Santillana.


Gambhir, M., Broad, K., Evans, M., & Gaskell, J. (2008). Characterizing initial teacher education in Canada: Themes and issues. Toronto: OISE.


Appendices

Appendix A: Expert

I used to be an expert
in almost everything.
I used to know the name of constellations,
and all the flags waving in the World Map.
I used to know taxonomies,
classifications of every kind,
how to count with Roman numbers,
old style calligraphy,

Before fonts came in with computers

I knew the list of Kings and Queens
of seven countries and territories,
and still my expertise was not complete.

“I am afraid I need to have proper
knowledge to be the teacher
they need”, I thought.
Then I became expert in
Maria,

the daughter of the cleaning lady
who came to my place every other week,
before the time Maria came to my class,

and LeRoy
who doesn’t do homework
because he lives in an car
with his father.

What did I know before about
what it was like living in a car?

I became an expert in
how the local Red Cross branch
would help me
with the Unit of Dental Health.
An expert in asking
my colleagues for help to solve
classroom problems. (not like those of the Math text book).

I became an expert in high expectations. I became an expert in knowing what life meant to my kids.

Then that principal yelled:
“You are a facilitator!”
“You are not a proper teacher!” ...

I still see her angry face.

Now I smile and fly higher. I know who my students are. where they are, where they need to go and what they need to do to get there. I became an expert wind-in-the-back for them to get places where nobody else has been before...

I used to be an expert in those things usually inscribed in other books.

Now, please, tell me: Isn’t it true that is possible to become an expert in growing life?
Appendix B: Prospective teacher

I was born three months premature,  
always the last student of the class,  
the last when racing in the field,  
the last in understanding.

I was sent to the Psychologist:  
“The boy is brilliant, mom,  
also a moron.  
He is lazy.  
Don’t expect that much from him”.

“Give him this pill twice a day,  
at least will not bother...”

Then I played with the thread of my buttons  
and caught flies in the air

my pockets full of little stones,  
burnt matches,  
elastic bands,  
marbles of thousand colours.  
I remembered every sequence  
of useless numbers;  
irregular Verbs became  
a passion to me.  
However,  
there was no way  
to get me seated for 5 minutes.

Then it was Teacher time:  
“Mom: this boy is driving me nuts.  
I explain to him twenty times the same,  
If he were more docile...”  
“Don’t worry, mom  
he will not fail, because you work hard  
and I am a good person”
I passed all grades
knowing all futile information
that made me happy:

Who was Baron Pierre de Coubertin?
Why the “umbrella” was not for the rain,
but for shade?
I knew!

Flying higher
With a C
in every test

And an A
in my sense of being different.

... Nobody else I met,
  knew how to fill in the whole world in a backpack.
Appendix C: Denial (In a discussion with a colleague)

I don’t know them,
I am not like them.
They do not want to learn,
They are not like me.

Their parents have known me since I was a boy.

I went to University,
... I had the will.

Dolores, Kevin’s mother
was my girlfriend when I was 16

I am not like them,
I don’t know them,
They are poor and smell,
The smell of poverty.

Listen to their accent, their pronunciation!

They are dark and smell,
The smell of hunger.
Not like me, I made myself,
I don’t know them.

I used to play ball with them
Some were my classmates
20 years ago

They don’t deserve me.
Never wanted to be like them.

We are still neighbours.

I don’t know them ...
While discussing this with my colleague, a rooster crowed.
I cried.
Appendix D: PD

It is not that he doesn’t know
Actually he knows a lot
And he’s funny too
Some of us laugh.

All his examples and ideas are great
They look great
The thing is that my classroom
Does not appear in his pictures
My kids are not his kids

there is a distance between
his endless speech
and my actual needs…
of course he is interesting and smart!
But he is not talking about my principal
Or my colleagues,
or my kids
Actually… he’s never been to my school.

according to their clothes,
the kids in the pictures
should be parents today
somewhere in the world
My colleagues,
cell phones in hand,
in the middle of their text-fest
while
the gentleman
from the Ministry or University
I don’t know now
spites his saliva
towards us,
the darkened audience.
---
Better to grade some tests due tomorrow.
Yes,
It is one day off school
It’s not bad
They pay the day off
And a good lunch…

Probably there is a good stipend
to the person who will be talking about
“Vygotsky in my classroom” …

What If they spend that money on us?
I am expert in teaching grade 3,
just look at their smiley faces
full of question marks every morning.
Appendix E: Teacher Knowledge

They believe
I don’t know.
They believe
I can be a simple receptacle.
A basin-in-the-head,
A ready-to-be-poured-in,
Second-class professional.

What do they know that I know!
not only Economics and Chemistry,
the patterns of tiles, constellations,
all King Lear’s tragedies,
and Napoleon’s foreign affairs
after Waterloo.

Do they know that I know?
I know the quiet sound of a growing kid:
The face full of embarrassment,
hidden, not to be seen.

What do they know that I know!
I know what success means
to those used
to losing in life.

The sound of parents’ steps
Walking to meet,
“Sir, help. Please”
……
Trust me. I know.
Teacher knowledge 2

Then I found in the newspapers
the checklist
Of what I should have known to be a good teacher.

The same list I didn’t want to read before.

I had the warning
that one day
someone
from the Ministry’s Central Level
would knock at my door
to ask me:

Do you know well the periodic table? √
Can you teach grammar? √
Can you calculate well with fractions and decimals? √
Are your kids quiet? √
Are their notes taken? √
Do you have up-to-date grades on your computer? √
You are not asking for days off, are you? √
You don’t support strikes, do you? ...
Are all parents in your class interviewed before week 8? √
Are they aware of the regulations of the Board? √
Hey, dear colleague”, they would ask,
Are you the good teacher our country needs? ...

Then I got scared,
I went to the elders to ask.
They asked me back:

What are the names of your students?
Name their parents, grandparents.
What do they do for a living?

They asked me

Do you know how do they live?
What do they eat?
Do they grow plants in their garden?
When did they come to this country?
How well do they speak this language?
Did they go to school when they were kids?
Have your students ever seen a dead body?
Blood in their streets?

What do your students say about how life begins?
What do they say it happens with the water after rain?
What happens with the Sun when it is dark and night?
What are your students’ theories about the world?

I remained silent.

I knew that I have been a
Lateral,
Superficial,
Marginal,
Teacher.
Appendix F: Acknowledgments

I’d like to thank all my College instructors for the insightful lessons I will never forget. I want to thank my classmates in College, and the Seconded Teacher in charge of my practicum. I learned from you a lot. Thank you very much. All good theory we discussed, All policies analysed, (all fake planning as well), however, came into flesh and bones when I came in the School.

It took me five, ten years To say, “I am the Teacher” (a Diploma’s been hanging in my basement saying I am a Teacher, since Convocation Day).

I became a teacher when my colleagues wrapped me up the day of the deception, the day of the annoy, the day of the discredit. When I decided to stop being a teacher they came to me to offer the second chance.

Since then my Teachers’ College is my community. A monthly meeting with the non-adapted teachers those who can’t obey the ministry, the board the superintendent. Those who know What being teacher is about. Those that from the error bring the good lesson for me. Those who are able to Tell me how wrong I can be
With a frank smile.
You are my safe space,
my community of mine.