Leading Inquiry-Based Learning

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Abstract

This article focuses on the role of the school principal in curriculum leadership for inquiry-based learning. Drawing on data collected in a study of inquiry-based teaching and learning in an elementary school in a large Canadian city, and in particular on interviews with the school principal, we explore the important role of the principal in leading and sustaining inquiry in schools. We organize our presentation around three significant themes that emerged from our analysis: (1) the role of the principal’s prior experience of inquiry-based teaching and learning practices, (2) explicating the nature of the work of the principal in leading inquiry-based teaching and the dilemmas of that work, and (3) the (principally systemic) elements of the educational working environment that detract from efforts to enact and sustain inquiry in schools.

Most of the literature that connects leadership with inquiry focuses on inquiry as a self-focused practice in which leaders and teachers (ought to) engage to improve their own practices and, ultimately, to improve student outcomes. For example, Oborn (1996) distinguishes the principal-as-administrator from the principal-as-leader, suggesting that the former works from a belief system that tends not to support the intellectual component of education, while the latter actively supports teachers’ inquiry into their own teaching practices. He suggests that, “schools should be staffed with scholar-teachers, and organized as centers of inquiry” (p. 5). While agreeing wholeheartedly with the idea that educators at all levels—including that of the principalship—ought to be continually inquiring into their own practices, in this article we connect leadership to inquiry in a slightly different way. We take as a starting point inquiry as an approach to teaching and learning in K-12 schooling, and focus on the role of the school principal in curriculum leadership for inquiry-based learning.

Literature Review

There is a vast body of literature focusing on the varied roles of the school principal. This brief review is concerned only with the aspect of the role that relates to curriculum and/or instructional leadership. Even with this narrowed focus there is extensive writing to consider that highlights the function of the
principal as a crucial agent in current school reform policies (Lambert, 2007; MacBeath, 2006), yet little of this work appears to focus on the specific task of providing leadership for inquiry-based learning in schools. Hallinger (2005) reviewed literature published over the last twenty-five years that draws on the construct of ‘instructional leadership’ and concludes that “there is a more discernable emphasis on instructional leadership in the profession than existed two decades ago” (p. 233), but as there is so much and so varied a literature that draws on this construct, Hallinger also questions how the very term ‘instructional leadership’ has been taken up in the literature—particularly concerning the “domains of policy, research, and practice in school leadership and management” (p. 221). Waters, Marzano, and McNulty (2004) note that research shows that effective school leadership can boost student achievement. However, they point out that there is no clear picture of what characterizes effective leadership. In their review of 70 studies, analysis revealed that effective leadership comprises 21 key areas of responsibility, all of which are positively correlated with higher levels of student achievement. These responsibilities include “ensur[ing] that faculty and staff are aware of the most current theories and practices in education and mak[ing] the discussion of these practices integral to the school’s culture” (p. 50) and being “knowledgeable about current [curriculum, instruction, and assessment] practices” (p. 49). In addition, Blase and Blase (2002) have argued for a deeper examination of ‘exemplary instructional leadership’ (p. 256), focusing on how leadership behaviours affect teachers’ classroom instruction.

Additional dimensions of the principal’s role have been identified. DuFour (2002) recognises the importance of shifting the attention of the principal from a focus on teaching to a focus on learning in the school. DuFour suggests that through the development of what he terms a ‘learning-centered’ perspective, schools can move towards the building of a learning community. To achieve this transformation, he advocates that the principal move away from the role of instructional leader and instead adopt the role of ‘lead learner’ within the school. Similarly, in discussing the findings of her study of the development of a learning community in one elementary school in the United States, Zepeda (2004) notes the importance of the principal gaining teachers’ trust as he or she moves forward an agenda of change.

While the above cited literature provides important background information for principals, and some of these ideas re-emerge in our own analysis of principals’ work as we show later, the literature on the principalship seems curiously quiet on the issue of leadership for inquiry-based learning, despite the fact that inquiry-based learning is increasingly promoted as an important approach to teaching (e.g., Alberta Learning, 2004; NCTM, 2000) and is being entrenched in mandated curricula in several jurisdictions in Canada (see, e.g., the new Alberta Program of Studies for Mathematics K-12, Alberta Learning, 2005a, and the new Alberta Program of Studies for Social Studies K-12, Alberta Learning, 2005b). In this article we attempt to redress this imbalance by contributing an analysis that focuses specifically on the role of the principal in providing leadership for inquiry-based pedagogies.
Theoretical Framework—A Phronetic Perspective on Teaching and Learning

The broad theoretical perspective framing this research is centred on Aristotle’s conception of phronesis (Dunne, 1993, 2005). As Coulter and Wiens (2002) note, phronesis does not easily translate into English, but a common translation is practical wisdom. Phronesis is a particular kind of knowledge—one oriented to action, and specifically ethical action, action oriented to the good (Lund, Panayotidis, Smits, & Towers, 2006; Coulter & Wiens, 2002; Ricoeur, 1992; Wall, 2003). Phronetic knowledge is knowledge with an irreducible core of judgment. Phronesis hence requires an interaction between the general and the particular. It requires consideration, judgment, and choice (Flyvbjerg, 2001). This kind of knowledge contrasts sharply with a technical perspective on teaching, which seeks to extract from [practice] a rational core that can be made transparent and replicable. … It is supposed that what is essential in the knowledge and skill can be abstracted for encapsulation in explicit, generalisable formulae, procedures, or rules—which can in turn be applied to the various situations and circumstances that arise in the practice, so as to meet the problems they present. (Dunne, 2005, p. 375)

Flyvbjerg (2001, p. 60) notes that phronesis is instead oriented towards praxis or thoughtful action and concerns itself with addressing three fundamental questions—Where are we going? Is this desirable? What should be done? At the heart of this reflective process is the notion of judgment. In phronesis, judgment... is an ability to recognise situations, cases or problems... and to deal with them adequately and appropriately. A person of judgment respects the particularity of the case, and thus does not impose on it a Procrustean application of the general rule... Receptivity to the problem is called for rather than keenness to master it with a solution. (Dunne, 2005, pp. 376-377)

A phronetic approach to teaching therefore calls forth from practitioners a set of capacities and practices that differ strongly from those valued within a technical rationalist frame (Dunne & Pendlebury, 2002). This cluster of practices is commonly known as an inquiry-based approach. Inquiry-based practice is a slippery concept, and it is variously interpreted and represented in the literature (Alberta Learning, 2004; Hayes, 2002; Moscovici & Holmlund Nelson, 1998). As Hayes (2002) notes, inquiry is often conflated or used interchangeably with other terms that describe similar pedagogies, such as hands-on learning, generative teaching, and constructivist practice. Unifying themes, though, tend to be a recommendation for teachers who wish to enact inquiry-based practices to shift their role from one of “initiator and controller to guide and facilitator” (Hayes, 2002, p. 149; see also Wurding & Rudolph, 2009) and to develop capacities to be responsive to students and to teach for understanding (see, e.g., Lampert & Ball, 1998; NCTM, 2000). This article draws on data collected in interviews with one elementary school principal to focus particular attention on the role of the principal in leading such inquiry-based learning.
Methods

Data collection

The purpose of the study was to explore inquiry-based teaching and learning practices in K-12 schools, especially those infused with technology. The data on which we draw here were collected over the course of one year in an elementary school in a large Canadian city. The participants in the research study were the school principal and two Grade 3 teachers and their students. Observations, documented by field-notes and photographs, were made in the classrooms, and the principal, the two teachers, and volunteer students from their team-taught class of 43 children participated in audiotaped interviews with the authors about their experiences of teaching and learning through inquiry. For the purposes of this article we draw exclusively on the interviews with the principal, though the other data sources formed a backdrop to our analysis and provided necessary context for us as we analysed these interviews. These additional data revealed that the principal’s support of inquiry-based practices formed a guiding philosophy for the school’s teaching staff and a point of reference for teachers in enhancing their teaching practices. While our analysis is of just one principal’s perspective on her role as instructional leader, as the literature is so scant in the area of leadership for inquiry-based learning we believe that this single-case study can provide insight into this emerging dimension of the contemporary principalship.

Sandra, the school principal who is the focus of this writing, has over twenty years experience as an educator. She began her career as a Kindergarten teacher, and gradually moved into an administrative role, spending time as an early-childhood education consultant and then as an assistant principal in four different schools before taking on the role of principal. At the time of our research, Sandra had worked for three years at a new K-3 school in a suburb of the city that served a mostly blue-collar neighbourhood. During the study, the school was undergoing major building work as it expanded from its current size to a new K-4 configuration.

Data analysis

Data analysis proceeded in three stages. The first stage involved the two researchers separately listening (several times) to the audiotapes of each interview to get a sense of the content of the material and to start to develop initial themes. These themes were documented and shared between the two researchers. The second stage involved transcribing of all the audiotaped interviews. The researchers then (separately) reviewed the transcripts, and associated documentation (such as field notes and photographs), and annotated them with notes that spoke to the initial themes or developed new ones, and again these documents were shared between the researchers. In the third stage, the researchers met to bring together and revise the emerging themes. An iterative process of revision and development of the themes followed in subsequent meetings.
Findings
In this section we draw on the interviews with Sandra to explore issues relating to her work in leading inquiry-based teaching and learning within her school. We organise our presentation around three significant themes that emerged from our analysis: (1) the role of the principal’s prior experience of inquiry-based teaching and learning practices, (2) explicating the nature of the work of the principal in leading inquiry-based teaching and the dilemmas of that work, and (3) the (principally systemic) elements of the educational working environment that detract from efforts to enact and sustain inquiry in schools.

The role of prior experience
Sandra spoke at length about the nature of her own experience of learning as a child within a rigid educational system, and about her later experiences of teaching within such a system. She perceived of herself as something of a rebel in both environments:

My issues around [inquiry-oriented] learning I think stemmed as far back as my childhood, where having gone through...in a very...controlled manner of education I always held the notion...that nobody really understood my thinking. And so it wasn't until I actually got to teach myself that I realized that you could teach in a way that children could be involved in making decisions in what happened in the classroom. And that it went beyond surface thinking. I think [of] myself as a reflective thinker about things. I need time to reflect. I need time to wonder. And I am constantly questioning. So, I started to try and play with that as a teacher.

Sandra reflected on being in a teaching situation where teaching approaches were rigidly controlled:

When I had to all of a sudden follow the book with the questions already laid out...that made no sense to me...I was quite rebellious as a teacher.

Sandra also revealed strategies she had employed to help her preserve some autonomy in her teaching. She described bringing into her classroom “outside experts” whose curriculum expertise condoned her non-traditional approach; moving away from the upper elementary grades and back into Kindergarten which typically received less scrutiny from administrators; and joining professional development groups in the city that were led and populated by like-minded teachers.

Reflecting on her later experience of teaching within a school where the principal supported inquiry-based approaches to teaching and learning, Sandra described it as the environment in which she had practiced to her full potential as a teacher. She also noted that she had learned “amazing things as a teacher through that experience” and had been called to reflect deeply on the experience when she used it as a basis for her Masters thesis. Moving into administration meant that Sandra had to learn to understand the nuances of her new role:
It took me a while as an administrator to switch from wanting to be the teacher. No, my job is to be the inquirer as to their practice...they inquire into children’s practice. I have to inquire into their practice.

The nature of the work and the dilemmas of practice

Provoking the Conversation. From the beginning of her work as a school principal, Sandra had been concerned about deepening teachers’ practice and bringing about change. She offered insight into how she opens up the conversation about inquiry with teachers unfamiliar with this mode of being in a classroom. Sandra noted that she talked to teachers about

the big questions...when they are planning.... A lot of my work or conversation is around William Doll’s [1993] work...his four R’s...recursion, richness, rigor and relationships. And so I spend a lot of time with teachers talking about what that means.

Setting the Conditions for the Emergence of Inquiry-based Practice. Sandra revealed how those initial conversations develop throughout the year, and become the undercurrent of all professional development topics and activities. She asks: “How do we fit into inquiry? What is inquiry? What is everybody’s role in this?...What does inquiry mean?” but noted that “it takes people a long time to wrap their head around...[the notion that] it’s simply not a research project. It’s much bigger than that.” Sandra also described the ways in which she encouraged team teaching in her school as a way to enact collaborative practices, which she saw as essential to the work of inquiry-based learning and teaching. While advocating for a team approach in her school, Sandra acknowledged the greater time commitment that is required of teachers who team-teach their classes. Engaging in thoughtful discussion about inquiry-based teaching and learning “takes longer to get that conversation to a point where you can work through it.”

Sandra also commented on the importance of physical space in providing conditions appropriate to the emergence of inquiry-based practice. She bemoaned the fact that many teachers “don’t spend any time in dialogue with other teachers around the actual pedagogy of what’s going to move that practice forward,” but she felt that the new addition that was being built onto the school to facilitate its expansion of grade levels could have a major influence on that problem. Sandra reported having “fought hard” to get specially designed folding walls between the new classrooms so that classes could be team taught and so that teachers could more easily communicate with one another about their teaching practices. Within the context of her school’s rebuilding, Sandra articulated a sophisticated understanding of how space, pedagogy, and politics were intertwined; and how provincial policies, enacted through architects and builders, impeded local desires for specifically-designed pedagogical environments.

Sandra recognized that an important part of her role in leading inquiry and ensuring that conditions supported the emergence of inquiry-based practices related to how she guided teachers’ planning-for-teaching processes. Seeking to “sustain conversation” she asks teachers:

What kinds of questions are out there? What kinds of things do you think children would be interested in that would be big enough to hold
conversation over a year’s worth of time? And what things are meant to be that important? How do we look at the world? My belief is that curriculum was essentially designed to talk about life…. If you have a curriculum that is rich, then any of those big questions will fit into it. So then teachers do not do traditional planning…. [I say] ‘I know curriculum, you know curriculum; you have to show me how you're going to use that to keep this rich conversation going.’ And so…. Instead of getting the traditional boxes, they would [create] a web.

Sandra showed as an example the plan created by the two teachers whose classroom was the focus of our study. These teachers had opted to use Inspiration, a concept-mapping software tool (which Sandra had deliberately installed on the school computers to facilitate inquiry-based work), to facilitate their planning for inquiry. Sandra described how she read the curriculum planning document provided to her by the teachers and how she looked for “how teachers relate…life experience to curriculum.”

Of course, provoking conversation about inquiry-based learning and setting the conditions for its emergence through practice is only part of the work of leadership for inquiry-based learning. A more significant and challenging aspect is sustaining teachers’ beginning inquiry-based practices.

Sustaining the Practice of Inquiry. As she considered the challenges of helping teachers understand the nature of inquiry, Sandra began by reflecting on the messiness of the work, noting that

it is a mushy process. There’s no clean way to go about this. And people struggle with it…. You should be sweating in this work. It should be hard. It should cause you to lose sleep at night. It is that challenging.

Sandra also noted teachers’ struggles to let go of traditional practices and learn to teach through inquiry:

I still see people blocking out time to do all the mechanics. They have yet to learn how to teach and work through the big work first, and then support that work with cleaning up the mechanics. They’re still working in reverse of that…. So part of my work is to continually give them permission to go at it the other way around. It will take probably several years to truly evolve through that process. It certainly isn’t a one year deal.

Sandra understood the complexity and time-dependent nature of learning to teach through inquiry and felt that the teachers with whom she was currently working would gradually hone their practice and

get more refined at seeing the bigger picture….They’ll come dancing down [to my office saying] ‘you should have seen the way so and so thought about this’ and then my job is to say, ‘So where are you going to take that? What are you going to do with that? What are you pondering about?’
Not all of Sandra’s work of leading inquiry and helping teachers learn about inquiry was centred on pressing them to ponder about the process. Sandra reflected that in deciding how to respond to teachers’ struggles she was sometimes faced with the dilemma of knowing when to intervene to re-orient their practices. This dilemma parallels teachers’ own dilemmas in making moment-to-moment judgments everyday about when and how to intervene in students’ learning processes. Sandra was deeply interested in visual representations of learning as a way to document children’s ideas and generate new avenues for investigation for both students and teachers. She discussed her struggles regarding a visually overcrowded and over-stimulating environment in the inquiry-oriented classroom we studied, a feature of the room that we also noticed during our observations. She spoke of the overwhelming visual stimulation in this classroom and wondered “at what point do I intervene or do I just be quiet about things [laughing] and let it take its own...forms?”

As we see above, Sandra’s choice is not always to act immediately. Such (in)action demonstrates that Sandra understands the delicacy of the inquiry process—how easily it can be disrupted by an inappropriate directive such as a “suggestion” from the principal to pare down the visual clutter of student work-in-progress in the classroom. Sandra’s choice not to act immediately on her concern also shows that she trusts her staff. However, hers is not simply a laissez-faire approach. At other times (as we have already described in our account of Sandra’s efforts to promote conversation about inquiry and to set the conditions for its emergence in practice) she takes explicit action to intervene, to provoke, protect, or enhance the inquiry process.

In pressing forward the work of inquiry in her school, Sandra also noted the challenge of communicating about inquiry not only with teachers but also with parents and upper administration.

Language this work is very, very hard. We don’t have effective language for conveying our understandings or ideas. And maybe that’s okay because our ideas are kind of reflective and it’s come from within ourselves and it’s evolutionary in the way it works, but it would be easier, as a principal, if we had a language that everybody understood to work with.

Sandra felt the challenge of communicating about inquiry to be compounded by structures that valorise technical-rationalist modes of measurement of growth. As Sandra noted, inquiry is a long-term commitment whereas schools are set up to value and measure short-term growth. Sandra noted that some of her teachers were willing to move towards inquiry-based practice, but were nervous about whether their students would “perform” on standardised measures of achievement. Sandra suggested that teachers need to learn to be patient about the process and expectations about “where we are in a process.” She added, revealingly:

I’m going to have to....figure out how to get around the push to become accountable in very thin ways. So how do we account in very meaningful ways for the inquiry work that we’re doing? And we are
starting, as a staff, to talk about that—how do we evaluate inquiry? How do we write about it in our report card? What kind of measures do we use?…. We are working as a staff on that.

These challenges led Sandra to reflect further on (mostly systemic) aspects of schooling that she felt detracted from the process of engaging in inquiry in schools.

Detractors from the inquiry process

There were a number of factors that Sandra indicated detracted from the process of enacting inquiry-based learning in her particular school context. Primary among these factors was a set of inter-related policies that affected the ways in which teachers were hired and distributed around the school division. In this school division, as in many, teachers with permanent contracts and greater years of service are “placed” in schools with vacancies ahead of new teachers and those with temporary contracts, even if that means ousting a teacher who has been teaching at that school on a temporary contract and who has an excellent teaching record, and even when the principal and parent body would like him or her to remain. This is, of course, a controversial policy, and one that has been noted in the literature as tending to have a detrimental effect on low-socioeconomic status schools, as experienced and long-serving teachers tend to flee from these schools (leaving them with high-turnovers of new and under-qualified teachers) and instead gravitate towards more affluent schools. Sandra noted that, while the influx of experienced teachers from across the school division provided some welcomed strengths, the policy also meant that she felt that she was constantly starting anew each year as she was forced to lose strong temporary- or probationary-contract teachers, many of whom would be the “new blood” of the profession most likely to actively take up the challenge of teaching through inquiry. She described feeling that she had been “starting for a long time” in trying to press for inquiry-based approaches with her staff. In the year of the study all but three of the staff were new to the school (out of a staff of twenty-five).

As we noted earlier, Sandra recognized that an important dimension of her role was learning—specifically, learning new roles as an administrator. However, a significant detractor from this learning process appeared to be the (increasing) amount of time that the principal must spend on administrative tasks that draw him or her away from the classroom. Sandra reflected with regret that she was spending less and less time in the classrooms in her school inquiring into practice and helping to shape teaching and curricula.

Learning to practice inquiry is a long-term, fully embodied process involving a shift in the learner’s identity as well as their practice (Phelan, 2005); in other words, learners cannot simply be told what inquiry is and be expected to enact it (Towers, 2010). Sandra felt that her own and her staff’s learning about inquiry (and therefore their capacity to practice it) was further compromised by the limited amount of time that they had available to them for professional development activities. Sandra noted that the school division, driven by pressure from parents to be “providers of day care for children,” had (in the year of the study) restricted the amount of school-calendar time allocated to teacher
professional development to five days. Sandra felt this didn’t even come close to the time that was truly needed to shift teachers’ practices, and so she had found ways to “squeeze out” more time for professional development within teachers’ already-busy days.

In Sandra’s opinion, one of the greatest challenges of inquiry is the difficulty of measuring its impact, and hence one of the greatest detractors was the regime of testing and evaluation imposed on teachers and schools. In order to respond to the challenge of helping children to demonstrate their knowledge, Sandra and her staff had started to focus their attention on inquiry “in a way that allows us to think about it in a….more measurable way.” Their collective focus had become children’s questions and “how does that question sustain thought or connect thought?” Their efforts were designed to “bring those measurements [about the quality of children’s thinking] to hold the same weight as a child who can spell fifty-two words correctly.”

Sandra noted that sometimes the curriculum itself stifled inquiry. She singled out the province’s new Social Studies Program of Study for particular criticism:

[The] new social studies curriculum is starting to limit us in terms of [the fact that] they have chosen countries, they have chosen things that you must study. And it’s my thinking that what we’re going to see is that that will show up somewhere in the provincial exams. And so if you don’t study Tunisia….you end up in a….place that will disadvantage children…. How do you bring this type of work along and not disadvantage teachers or children for having been in your school?

A final issue that Sandra thought held challenges for her practice and that had the potential to detract from the work of sustaining inquiry is perhaps the feature that is inherent to the process itself and therefore most difficult to remedy—the very nature of the inquiry-oriented teachers themselves. Sandra remarked that inquiry schools attract

high-change teachers—[who]…don’t stay with you long. They will move on to try [inquiry] in different circumstances or different ways…I used to be hurt by that; I’ve gotten over it. Because I’ve realized those are the kinds of people I hire.

Despite articulating factors that detracted from the work, Sandra remained positive about the potential for inquiry-based practices in schools. She reminded us that the work itself is, ultimately, what keeps her focused. She noted that, “you let the controversy swim around you, right? The primary focus is always…the work.”

Discussion
Sandra’s experience of leadership for inquiry-based learning, read through the lens of phronesis, reveals some important implications for the work of the principal, for school board administrative policy, for the education of current and future principals, and for further research on leadership of K-12 schools.
Implications for principals’ work

It is clear from our analysis of Sandra’s work in leading inquiry that principals committed to fostering inquiry-oriented teaching must devote a great deal of time to thinking and communicating about inquiry. Such communication must come at the level of whole-school professional development and on a one-to-one basis with individual teachers. As Sandra repeatedly noted, developing inquiry-based practices is a long-term process. Sandra concentrated on “sowing the seed” of inquiry by promoting conversation between teachers and between teachers and administrative staff, and then providing rich soil in which those seeds could germinate by creating conditions in which inquiry could thrive. Sandra then worked hard to sustain the growth of teachers’ practices by vocally championing inquiry-based practice in the community, by engaging in carefully helping teachers learn more about their own inquiry-based capabilities, and by pressing them to think more deeply about practice. All this takes time, and Sandra was at pains to point out that what she found most difficult was finding time in her day to spend time in classrooms—a core element of instructional leadership practice. In addition, the principal must have time to study and interrogate the practices (s)he observes in classrooms and these activities must be embedded in the principal’s daily work. Take, for example, Sandra’s deliberations about the busy visual field in one classroom that we described earlier. In phronesis, critical judgment is not a higher type of knowledge that can be brought to bear on an activity; it is exercised, and makes sense, in the very activity itself (Dunne, 1993). Knowledge so generated cannot be made accessible through general propositions or solely on a theoretical level; it exists and consists in our acting. Responsiveness, flexibility, and perceptiveness in discerning what is needed are the hallmarks of phronesis (Dunne, 1993) and such capabilities and dispositions need time to be cultivated and to flourish. Our reading of the data indicates that this form of instructional leadership, while being perhaps the most important dimension of the work of school leadership, is gradually being squeezed out of principals’ lives as they scurry to manage budgets, attend divisional meetings, and complete a host of other administrative tasks. Given that inquiry-based learning is now a mandatory component of many school curricula (e.g., Alberta Learning, 2005b) and is being explicitly encouraged in policy documents (e.g., Alberta Learning, 2004), and given that there is mounting evidence that it enhances student achievement and/or understanding (e.g., Boaler, 1998; Hickey, Moore, & Pellegrino, 2001; Reys, Reys, Lapan, Holliday, & Wasman, 2003; Senk & Thompson, 2003), we believe that it is imperative that principals’ administrative commitments be adjusted so that they can re-focus on the difficult work of leadership of (inquiry-based) learning.

Implications for school board administrative policies

As we have already noted, a significant policy shift is required that will allow school-based administrators to spend more of their time focusing on enhancing learning and teaching in their schools. A key component of this realignment would be a policy that allows for increased professional development time for teachers. As our data presented here indicate, and as we have noted elsewhere in our investigations of inquiry-based teaching and learning from the perspective of teachers and students (Towers, 2008, 2010), teachers cannot simply be told to enact inquiry-oriented teaching, nor even told how to enact it, they must both experience it themselves and have opportunities to engage in deep and sustained
professional conversations about its nuances. Such back-and-forth interaction between theory and practice, the general and the particular, is fundamental to a phronetic understanding of schooling. Sandra, in her commitment to inquiring with teachers about their practice, embodied this understanding; and it is from this generative space that, in her school, work that enhanced inquiry emerged.

Other important conditions were also highlighted by Sandra’s experience, and these include the significance of physical spaces in schools that are conducive to collaborative practice and the importance of considering how schools are staffed. While we understand that the school system must, in many cases, work within the limitations of the physical infrastructure that exists, we find it inappropriate that a principal would have to ‘fight hard’ to win permission to have an extension to the school built in such a way as to enhance collaborative teaching, especially as research shows that developing a community of inquiry is critical in helping sustain inquiry-oriented teaching (Towers, 2008; Panayotidis, 2005) and school change (Main, 2010). But physical spaces are not enough; principals need to be able to exercise sound judgement about the where the school is heading philosophically, and who needs to be gathered together to take the school forward on that path. Sandra had clearly spent a lot of time thinking about praxis in terms of Flyvbjerg’s (2001) three fundamental questions—Where are we going? Is it desirable? What should be done?—and her experiences can help us as we think about these core educational questions in relation to the ways in which schools are staffed. With respect to teacher distribution policies, we strongly urge school board administrators to understand the tentative steps that must be made on the journey to strong inquiry-based teaching, and to recognize how easily these can be disrupted by changes in staffing year after year. Although, as Sandra noted, teachers drawn to this kind of work may be “change-junky-ish” by nature, many new teachers are committed to this kind of work but find it difficult to have their practices take hold, especially in situations where they meet resistance to their ideas (Towers, 2010) and especially when they have to move from school to school in search of a permanent contract. Similarly, efforts to sustain inquiry in schools can be hampered by school board policies that foster high staff turnover, resulting in school leaders feeling as though they are starting fresh every year in building a collective curriculum vision.

**Implications for the education of school principals**

It is our impression, reinforced by Sandra’s reflections on her own history of learning, teaching, and leading, that leaders like Sandra are considered to be mavericks. Given the increasing importance of inquiry-based approaches in Canada, we suggest that educating current and future principals to understand and encourage inquiry-oriented practices should be moved to the mainstream of education for school-based leadership. Too few of those moving from the ranks of teaching to those of administration, and engaging in graduate study or other professional development, focus their studies on curricular matters, and fewer still have themselves been educated through inquiry; hence too few are fully prepared to lead inquiry in schools. A phronetic interpretation reminds us that receptivity to a problem rather than keenness to master it with a solution is desirable; and we ask those responsible for leadership development in Canada to give careful attention to the way in which principals are prepared for their role in
leadership of learning, particularly inquiry-based learning. Are future principals asked to deliberate about the good and to develop practical wisdom (in Aristotle’s terms) concerning the challenges facing contemporary schools? or are they pointed swiftly towards the latest research on effective solutions and management efficiencies? Where are the mechanisms (physical, social, school-embedded, school-board sanctioned, etc.) through which school principals or those preparing for such a role are able to talk about what should be done (with regard to curriculum in schools) in the light of the question of what is right to do?

Implications for further research
Given the paucity of literature that deals specifically with principals’ experiences of leading, or learning about, inquiry-based learning and teaching, this is certainly an area that warrants research attention. In particular it is important that research addresses the nature of principals’ experiences of leadership for inquiry-based learning, the nuances of this aspect of principals’ work, the ways in which principals might be educated about inquiry, and the impact of a principal’s commitment to inquiry on the experiences and achievement of teachers and students.

Conclusion
While there is an extensive body of literature on effective school leadership, little attention seems to have been paid to understanding the nuances of leading inquiry-based learning in K-12 schools. In this paper we have explored one elementary school principal’s experiences of such leadership. Our analysis has helped illuminate the dilemmas of this work and some of the factors that detract from its sustainability, but also its rich possibilities for creating new learning opportunities for administrators, teachers, and students. We hope that other principals will take up this important work in schools, and that increased attention to this phenomenon in the research and professional literature will provide help and guidance for them as they do so. Inquiry-oriented teaching, grounded in practical wisdom, is difficult work, and learning to enact it is a long-term commitment. For such teaching to thrive, strong leadership oriented to provoking, protecting, and enhancing inquiry in schools is essential.

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