

Organisational Learning in the ‘Knots’: Discursive Capacities Emerging in A School-University Collaboration

As educational organisations increasingly form collaborations through partnerships and networks, interesting questions have been raised about the resulting interplay of diverse discourses (Nakagawa, 2000; Seddon, Billett, & Clemans, 2005) and the learning that emerges (Peel, Peel & Baker, 2002; Rusch, 2005). Some research has identified leadership strategies – problem-solving processes, in particular – that can effectively be brought to collaborative situations (Leithwood and Steinbach, 1995). Yet the available educational literature analysing school- and university- collaborations using organisational discourse analysis and organisational learning theory is yet small. In this regard, educational theorists have recently urged greater attention or ‘bridge-building’ to organisational theory and organisational learning frameworks to enrich our understandings of school dynamics (Fauske and Raybould, 2005; Johnson and Owens, 2005). This article takes up this challenge. A case study of a complex school-university collaboration is examined using critical discourse analysis and a practice-based theory of organisational learning known as ‘knotworking’ (Engeström, Engeström & Vahaaho, 1999). In particular, the discussion here is focused on discursive challenges confronted by actors in the practices of negotiating the collaboration, and the capacities or learning that emerge. For educational administrators this kind of analysis provides tools for understanding the discourses and emerging practices afloat in organisational collaborations. When the resulting tensions are viewed as important sites for unexpected and useful if difficult learning, administrative attempts to control and direct these tensions appear to be counter-productive.

In the broader literature of organisational theory, studies of inter-organisational collaboration have drawn attention to the changing discursive practices and power-riddled social

relations involved. Both hybrid and utterly novel practices and relations result in these collaborative sites, that may be described as organisational learning. In particular the concept of 'knotworking', rooted in a practice-based theory of learning as participation in joint activity, appears to offer a fruitful frame of analysis for making sense of organisational learning that occurs when organisations collaborate (Blackler & McDonald, 2000; Engeström et al., 1999). Sites of inter-organisational collaboration are characterised as 'knots': a loose network of actors, practices and systems that does not have a centre, and in which the only consistency over time is the ongoing mix of interaction among contributors, discourses, tasks and tools (Engeström et al., 1999). New capacities and knowledge are learned in these co-configured knots through 'knotworking'. If organisational learning is understood as everyday participation in systems of practice embedding cultural histories and circulations of power, knotworking would represent participation in sites of colliding systems. Different interests, values and practices brought by constituent groups must be mediated in the knot. New learning challenges are presented as actors struggle to make sense of unfamiliar situations in the knots, improvise collaborative practices and negotiate the politics of colliding knowledge systems and interests of multiple organisations. In particular, different organisational discourses and discursive strategies encounter one another, and must be negotiated somehow by the organisational actors working in the knots.

Education is arguably an example of a sector where these networked 'knots' form in inter-organisational collaborations. The case under examination here involved one unit in a large university, a school district, an elementary school, teacher-researchers and a parent executive board who had created a collaborative teaching-learning research site. This site, called here the Child Learning Laboratory (a pseudonym), functioned as both a children's school and a living laboratory for educational researchers. The Laboratory itself appeared to be an amoeba-like knot

of inter-organisational activity in itself, but its boundaries were so ambiguous that, as parts of it moved and overlapped with the larger, stable organisations at whose intersection was constituted the Laboratory, other knots of activity were generated. Individuals involved in these knots demonstrated varying awareness of the discursive tensions at play and used a range of strategies to negotiate meanings, represent interactions, and find a place for themselves in the discursive order.

Drawing from an analysis of this case, two questions are explored in this paper. The first is, *What (unique) discursive work is implicated in knotworking?* This question highlights observations about the everyday negotiations and improvisations that occur as actors engage with multiple discourses in the ‘knots’ of inter-organisational networks. Here it is argued that these negotiations constitute unique discursive practices, requiring particular capacities. The second question addresses implications of the first: *What knowledge and capacities are learned in this discursive work?* This brings into focus the learning as different actors perform discursive work at the ‘knots’. The case analysis suggests that actors who thrive in knotworking learn to be critically attuned to shifting discursive patterns that emerge in negotiations among different constituents: overlapping discursive communities, troubling discursive intersections and resistant discourses. These actors learn capacities of mapping, translating, rearticulating, and spanning boundaries among discursive communities. Some teach others, explicitly signaling the discursive work they are doing by promoting and modeling critical attunement to language. However certain actors such as some administrators were unable to shift their discursive strategies and negotiate new meanings, and tried to bring closure or impose one dominant representation on interactions within the knot. These actors experienced difficulties such as rejection by the group and severe personal stress.

Capacities in Knotworking: Concepts from Organisational Learning Theory

Engeström (2004) is among those who claim that, increasingly, forms of work and learning are shifting towards more distributed, networked systems created through arrangements such as collaborations among organisations. In particular Engeström draws attention to ‘co-configuration’: the mutual interdependence of organisations creating a partnership of some form involving ongoing relationships of mutual exchange among organisational members.

Engeström’s argues that co-configuration both produces and demands a unique form of knowledge: a dialogical configuration of knowledge. Building on this idea, Engeström describes the learning and activity that occurs in co-configuration as ‘knotworking’. This is a phenomenon of decentering first observed in the complex collaborations of multi-agency provision of health care (Engeström, Engeström & Vahaaho, 1999). There was no apparent centre of control: the only stable feature was an ongoing mix of interaction among contributors, tasks and tools. In the knot itself, actors and networks were only loosely interconnected, their collaborative activity rapid, distributed and partly improvisational. While highly variable in the short term, over the long term Engeström *et al.* observed patterns that they called ‘pulsation’ by which knots were tied and untied, loosened and tightened. Learning in such inter-organisational sites, argued Engeström in a later paper (2003), involves both learning *for* the demands of co-configuration (such as developing procedures and analyses to enable engagement in the knots), and learning *in* the interactions themselves presented by knotworking. Thus knotworking can be understood as participation in a particular kind of system that forms at the confluence of diverse collaborating organisations and discourses. Actors and activities in these inter-organisational ‘knots’ tend to be contingent. Thus forms of participation may resist fixation and invite more frequent re-negotiation than occurs in other organisational systems.

Blackler and McDonald (2000) borrowed the notion of knotworking to examine the learning that occurred in the decentered networks of inter-organisational collaboration. They concluded that study of these ‘knots’ helps reveal both organisational learning and power, where power was understood to be ‘both an ongoing product and medium for collaborative activity’ (p.840). Power as assumptions about normality and justice is embedded in discourses, technologies, structures and institutions, influencing people to act in particular ways while they are themselves influenced by unexpected disruptions, resistances, and new configurations. However, Blackler and McDonald found that when working collaboratively in inter-organisational knots, people must interact in networks no longer bounded by the knowledge, practices and relationships that normally regulate their work. Knotworking involves improvising new fluid patterns of activity: as people invent new practices and creative orderings of work, they stimulate changes to themselves and to their organisations. This learning, conclude Blackler and McDonald, deserves more research. In particular, they suggest more study of the individual and organisational changes stimulated in knotworking, and the capacities that support effective decentred collaboration.

Given the evident importance of communicative activity in knotworking, the particular interest in the present discussion is the emergence of discursive capacities and practices occasioned in ‘knots’ between organisations, and the related power flows released in these interstices. For this purpose, theories of discourse analysis are needed to enrich the analysis.

Discursive Practices and Power: Concepts of Organisational Discourse Analysis

For purposes of this argument, ‘discourse’ signifies an arrangement of ideas, concepts, and categories through which meaning is given to a phenomenon, a narrative used by actors to make sense of the world. A focus on discourse is not to assert that

language is all there is, only that language can shape the world: restricting or authorising particular meanings, and distributing ideas and beliefs that frame work activity.

Negotiations of language in collaborative arrangements involves new literacies, argues Gee *et al.*, (1996) where knowledge is no longer centred in particular organisations but distributed across social practices and institutions. For example in educational partnerships, Nakagawa (2000) suggests it is not uncommon for an institutional stakeholder to be constituted within a hierarchical structural discourse, where practices or rules and routines are formally standardised and codified into written text, and where roles and their scope of authority are clearly defined. Where the partner group functions within more informal, relational, intuitive or fluid discourses, it may have difficulty finding vocabulary or subjectivity within the managerial-structural discourse. Yet both stakeholders need to understand how they are enmeshed in the same discourses, and through interaction, with each other. The actions and stories of each at least partly construct the responses of the other.

Critical discourse analysis (Fairclough, 1992) offers a useful method for studying these textual practices. Power dynamics infuse all discursive practices, and can both exclude and colonise, as well as amplify and expand. Activities and subjectivities in any work site are influenced by those discourses and their semiotics (the signs, codes, and texts) that are most visible and accorded most authority by different groups sharing that space. For example as Bogotch and Roy (1997) have shown, educational administrators' talk shapes and is shaped by the school context in ways that can subvert their (moral) leadership intentions. Discourses legitimate certain values and exclude others, by representing 'norms' and casting nonconformists as 'other' to these norms. Farrell (2001) urges critical examination of how discourses of

continuous learning, change, collaborative community and the like are naturalised and assimilated into organisational talk and activities.

In critically analysing discourses circulating in an inter-organisational knot, one may adopt what Patterson (1997) has called a ‘condition of doubt’ to trace power relations evident in their interaction: which discourses are granted dominance, which are suppressed or nominalised, which become invisible, and which struggle for voice or resist. These tensions can be expected to occur within as well as between discursive communities. For Fairclough (1997), the process of discursive negotiation involves not just conflict but also semiotic hybridity, intertextuality and identity flow. That is, discursive dynamics among organisations are not simply cycles of domination and oppression. Instead, processes of exchange, absorption and mutual modification occur among each other’s texts and identities (Farrell, 2000). To identify these processes, Fairclough suggests detailed analysis of semiotic features of texts and interactions, examining how they draw on societal ‘orders of discourse’, and considering what is left unsaid as well as what is said in choosing this signifier or that image to construct a particular meaning.

A study of inter-organisational labour and knowledge then, drawing from the conceptual frameworks described here, examines the discursive strategies that actors develop to negotiate textuality in everyday practice. This discursive work is particularly demanding in inter-organisational collaboration, which at least in some instances produces the decentered networks that Engeström (2004) calls ‘knots’: loosely connected, improvisational sites of interaction that present unfamiliar situations demanding unique discursive negotiations. Two questions implicit in these concepts help explore the nature of this learning in knotworking: *What (unique) discursive work is implicated in knotworking?* and, *What knowledge and capacities emerge in this discursive work?*

Learning Discursive Practices in an Inter-organisational Knot: A Case Study

In the case study under examination here, these two questions are explored in an inter-organisational collaboration in western Canada involving the faculty of education in a research-based university (33,000 students), a large urban school district (79, 127 students), an elementary school (246 students) and a group of parents to provide full-time experimental instruction to children in a living research laboratory. The result was the Child Learning Laboratory, which had been operational for 6 years when this study was conducted in 2003. At that time the Laboratory was providing fully accredited instruction to 350 children pre-kindergarten to grade 5. Since then the Laboratory has apparently expanded its programs to grade 6. The researchers (Tara Fenwick and graduate assistant Mark Biddle) were aware of the collaboration and the Laboratory and knew some of the university participants, but were not personally or professionally involved in the case beyond their research activity.

Methods

The case was researched through document analysis (policy statements, meeting records, programme descriptions), visits to the Laboratory and elementary school sites, and seventeen personal in-depth interviews conducted with a range of participants in the negotiations. Those interviewed included the original and incoming Laboratory Directors, three parents sitting on the Laboratory executive (who were the most closely involved with the partnership negotiations), five teachers and teaching partners, four university faculty members who frequently used the lab centre, the city school district coordinator of special programmes, and the two school district principals (outgoing and incoming) responsible for the one Laboratory class housed in a neighborhood school. Participants each were asked to narrate the chronology of events, their involvement and motivation in the case, and particular incidents they identified as critical to their

organisation and to themselves personally. Discourse analysis proceeded on transcripts and documents following approaches suggested by Fairclough (1992). For example in analysis of interview transcripts, individuals' narratives were assessed in terms of the language used to represent and interpret events and experiences, and the semantic patterns linking words in what Fairclough calls particular discursive practices (identified by force, coherence, and intertextuality). These linguistic patterns were contrasted across the transcripts and documents. The analysis was inductive; the discourses at work were identified bottom-up through participants' own narrative structures and choice of signifiers. The comparative analysis yielded some common textual patterns and representations shared within groups, as well as clear tensions within and between the groups' patterns. Later, these patterns were compared with larger discourses circulating in the social spaces of this case: such as discourses of 'collaboration', 'accountability', 'integrity' and 'alternative programs'. An important limitation in this study in terms of discursive analysis is that the only interactions recorded and analysed were those of individual participants with the researchers. While this prevented analysis of interactional patterns among participants within the contexts of their everyday activity, it enabled the examination of individuals' language and perspectives without direct suppression or modification through others' influence.

Overview: The laboratory school

The Child Learning Laboratory literally existed at the interface of the organisations collaborating in its design and operation: the university, the school district, the elementary school, and the Laboratory parent executive board. Despite its longevity, the Laboratory exhibited the loosely connected, decentered mix of interactions characterising a 'knot': researchers came and went, graduate students and faculty entered Laboratory classes to

experiment with pedagogical methods and offer demonstrations, teachers and students fluctuated, and the ongoing leadership and governance of the Laboratory was worked out between its teaching staff, the local school district, university administration, and a parent group. Location was also distributed: the Laboratory was housed in three different sites at the host university. Some classes occupied the basement of the Education building, some were in a small pretty building at the edge of campus, and one was housed a few blocks away in a neighborhood school.

The Laboratory's pedagogy was project-based, an experimental method passionately promoted by an education professor who was allotted one-quarter time release to help direct the Laboratory. The children focused on inquiry projects and had daily access to university resources (museums, laboratories, libraries). Their own project-centered activities co-existed with the pedagogical research being conducted by the Laboratory's many visitors, in which the children and their activities were the objects. The frequent involvement of university faculty, students and visiting scholars as observers and demonstrators lent an air of importance to the Laboratory's everyday activities: this was not just another school. Further, the Laboratory enjoyed unusual autonomy and a certain freedom from the regulatory controls of both the university and the school district. In the Faculty of Education that held responsibility for it, the Laboratory was a research centre reporting to one department and to the dean. Perhaps because it had little official status or influence, and perhaps because of its unique shape and function that simply did not fit its allied institutions, the Laboratory thus existed as a mix of action in their interstices.

Over time this ongoing mix had experienced certain 'pulsations' that Engeström et al. (1999) observe in such knots occasioned by changes within one of the collaborating organisations: new leadership bringing new views about the Laboratory, or organisational shifts

in purpose or resources that spilled into the Laboratory's operations. The rather intense pulsation that coincided with this study began as an urgent need for more classroom space which compelled the Laboratory to negotiate a firmer partnership with the local City School District. (The Laboratory's Director was granted the authority to conduct these negotiations, without the direct involvement of administrators in the Faculty of Education, even though the Faculty maintained certain responsibilities of governance and in-kind budgeting for the Laboratory.) Eventually a new collaborative agreement was reached among parents, teachers, university personnel and school administrators, but not without stormy meetings, polarised positions and repositionings, misunderstandings, and the departure of two administrators for stress-related illness. Some participants seemed uncommonly able to articulate knotworking's challenges and the strategies they found themselves developing to cope: perhaps their awareness had increased with the conflictual drama of these activities. This is why a case study that began as an examination of school district partnerships turned into a study of learning in the discursive practices of inter-organisational knotworking.

Tolerating fluidity in the knot

Those who thrived in the everyday knotworking of the Laboratory had to learn to tolerate the permeable open shape of its configurations and the everyday improvisations through which the programme and decision-making emerged. Personnel within the Laboratory employed a distinctive language that was markedly different from the formal languages apparent among the university or the city school district personnel. At the Laboratory, directors, teachers and parents alike shared an intimate, personal, feelings-based language. Indeed, most described the Child Learning Laboratory as small, caring, and 'connected' – 'like a family.' One parent highlighted

the distinction of this communal organising from the more rigidly bureaucratic organisations that were perceived to characterise education elsewhere:

We have this culture of respect . . . you can't separate that into an organisational thing, so you have a real communal sort of way or learning. The teachers talk to these children . . . education is not a pre-conceived box that's given to them.

Boundaries that tend to characterise relations in public schools here were blurred. Parents knew the teachers closely and dropped into classrooms when they pleased. Roles of teacher, parent, parent executive board and administrator were fluid, as a teacher explained: 'We kind of slipped in and out of everyone's shoes at different times.' Decision-making also was described as loose and 'informal', occurring in daily conversations or impromptu staff gatherings. In fact, until recently no official written record described the school's philosophy and structure, or specified procedures, standards or evaluation. The assistant director explained:

There was never a formal framework under which the [Laboratory] operated, which made it easy to understand your role—it was always evolving and changing. Often we were self-defined, sometimes it was defined for us and as it grew, of course it changed.

University researchers and administrators involved in Laboratory activities uncharacteristically also appeared to engage this permeable, ambiguous discourse. Decisions regarding space, funding and programme governance were worked out from time to time between the Laboratory's director and the relevant Dean and department Chair. In an organisational environment where lengthy negotiation processes typically formalise every aspect of a programme's operation, the Laboratory knot thus appeared to be a bubble in which regulatory discourses were suspended. The school principal who became involved much later in the Laboratory explained why formalised governance structures were not helpful:

I don't know that there's really a model to look at for doing this kind of thing at a school. . . . To me the informal level is how you do it day to day. . . . And I guess that's the danger of a formal agreement. . . . Rather than people working out issues, sitting down at a

table and working out issues, they'll go to the agreement and say that you don't have the authority, you don't have the right. ... The whole Laboratory thing is so complex.

Not all individuals were able to function effectively within this discursive informality and loose interconnections. Stories were told of teachers and parents seeking more programme and policy structure, more written documentation and accountability, who had left the Laboratory. One administrator left, citing frustration in the lack of order. For those who stayed, the discursive capacities required in the everyday mix of actors and activities appeared to include patience with daily oral negotiations and tolerance of ambiguity and uncertainty. Generally actors, including leaders, had to refrain from defining rigid boundaries and settling problems with totalising explanations and prescriptions, relying instead upon everyday micro-interactions to name what was happening and work out tentative solutions. A free flow of researchers, children, teachers, university students and parents therefore was held in balance through these open-ended negotiations, neither threatening nor attracting much official interest.

Learning to negotiate 'pulsations' in the knot

But according to Engestrom (2004), knotworking is subject to pressures and power struggles that erupt from time to time: 'pulsations' of loosening and tightening, of disequilibrium and restabilising, of the knot. In this case, the Child Learning Laboratory's continuing growth finally exceeded its physical capacity at the three distributed sites. A decision to request more classrooms from the City School District occasioned a process of negotiating a formal partnership. This process involved increasing pressure as two very different discursive communities collided, amplifying tensions within and between each. The partnership negotiations and consequent disturbances generated new discursive work within the Laboratory, calling for new discursive strategies among the knotworkers. This new work, described in the

following paragraphs, included self-definition, developing a strategic solidarity and temporary but flexible positioning, and clarifying relationships with partnering institutions that guaranteed peaceful co-existence.

In contrast to the Laboratory's fluid boundaries and informal personal language, the CSD functioned as a formal highly structured bureaucracy. CSD administrators drew from managerial and legalistic discourses to negotiate with the Laboratory, aiming for what the original principal explained was an 'administrative arrangement' that must be 'hammered out' in 'nitty-gritty details.' Discursive strategies employed by CSD central office and school-based administrators relied on rational processes of clarifying 'core values', indicated a belief that common core values could and should be articulated explicitly so that all could see where they agreed. This managerial-structural discourse was pervaded with a unitary philosophy of schooling and pedagogy, linked to assertion of the CSD as a clear centre of authority, codification, and accountability:

We have developed a philosophy and we have processes and we have expectations of principals and school staff and we have defined a role for parent groups. We evolved to a stage where we could put that down in writing and share it with our schools so that they know what the base is in our district. . . We are clear about what we've approved and that we have something to fall back on should there be some disputes or need for resolution. (CSD coordinator of alternative programmes)

As pointed out by a reviewer of this article, the emphasis here on institutionalising and codifying ('put down in writing') elements of values, process and roles can be attributed to school districts' preoccupation with accountability as a governing principle. CSD personnel described the Laboratory as just another one of 30 alternative programmes in its jurisdiction, not particularly unique, and subject to the school district's formal terms for governing alternative schools. This was perceived by Laboratory personnel as a threat, an attempt to appropriate and regulate. In response to felt threats from this managerial-structural dominant CSD discourse, the

more fluid Laboratory discourse began to congeal around signifiers of homogeneity and coherence such as ‘integrity’ (referring to preservation of its informal structure, University affiliation and free flow of parents and visitors into classrooms) and ‘research’ (referring to emergent processes integrating children’s learning and external collaborators). City district schools were represented by Laboratory parents in derogatory extremes: ‘hierarchical box-cars’, ‘prison-like’, places of ‘spoon-fed curriculum’, ‘lacking creativity and spontaneity.’ This language polarised a *we* united in a special pedagogical philosophy to which *they* are insensitive. Part of this we-they binary might be viewed as a reaction to the district’s focus on accountability and rational managerialism. The fixed and unforgiving representation of the public school produced through these terms worked to seal off the Laboratory’s characteristic openness. A hard discursive boundary was drawn, further distancing the CSD and defining the Laboratory in opposition.

In contrast to the emotional language of the Laboratory participants, the CSD proceeded to rationally address the ‘communication problem’ through its managerial-structural discourse, hardly acknowledging this emotionality and commitment. Discursive strategies applied by the original school principal focused on rational mediation of interests, ‘helping’ parents to articulate their hopes and fears but bracketing his own from the exercise. He seemed pleased with his congeniality, apparently unaware of potential effects of this controlling gesture and unitary assumptions: ‘I think ... they felt that they were being listened to and that we were trying to address their needs’. To his bewilderment, several parents became infuriated. Their prevailing conclusion was that the Child Learning Laboratory was being misrepresented as a non-accountable non-substantive programme, its fluid practices of collaboration and intimate relationships unrecognised. One parent declared, ‘I really had no faith that [the principal] had

any concept of the learning environment nor the programme.’ Other parents withdrew, worried that the disequilibrium would result in the Laboratory’s closure. Teachers – whose fragile employment status in the knot suddenly became in issue – began to split: some aligned with parents against the CSD, some retreated to uphold the research interests of the University, others splintered into a group opposing the parents, and one left the Laboratory.

In these intersections, problems emerged when participants failed to recognise the fundamental discursive differences and the dynamics at play among constituents when one more powerful partner flexed its linguistic strength. Discursive politics unfolded as each tried to constitute, even totalise, the other through representation in its own terms. When the knot’s open boundaries and fluid interactions hardened, its survival was threatened as it fractured along lines of difference that had formerly been held in balance.

One parent group, alarmed by a fear that ‘the different stakeholders were taking care of their interests . . . [nobody] acting for the best interests of the children’, became mobilised within the knot in a resistant discourse. Despite inner tensions and struggles, an anti-institutional solidarity developed around a notion of ‘taking the issues into our own hands’. The CSD’s language sparked fears of assimilation, as one mother explained: ‘The principal would say things like ‘I want you integrated into this school system as quickly as possible’ which every parent was hyperventilating emergency [sic] over that.’

Gradually the parents recognised that a strategic unity and position needed to be created for the Laboratory. Parents and teachers organised to write up the Laboratory’s programmes and philosophy in a formal statement. They held regular meetings to examine governance alternatives for a partnership and develop strategy. One father emerged as an informal leader to communicate their position more effectively to the CSD. This man translated the Laboratory’s

meanings into a managerial-structural discourse that was recognisable to the district administrators: ‘We positioned ourselves as [one of] three stakeholders to pilot a new structure. It’s like a trial, manufacturing a new product.’

Here may be a display of a certain discursive hybridity that Fairclough (1997) describes in working across differences. By strategically adopting selected language and practices of a rational discourse to define itself, its position and its boundaries, the Laboratory eventually gained parity with the CSD. The CSD appeared to have understood and responded to this structural representation. The Laboratory won the right to run a project-based pedagogy, with permeable boundaries allowing an informal flow of research activity and parents, while continuing to run its own distributed activities and loosely connected relations across university, school, and community. These concessions required the CSD to broaden its policies, and even adopt the term ‘teaching partner’ which directly challenged its own personnel classification. The question which may persist in the longer term is the extent to which the Laboratory’s decentered knot-like status has become institutionalised in the partnership negotiation process. For the short term at least, the more important question of the Laboratory’s satisfaction with its conditions appears positively resolved. That is, its ordering processes appear to have reached a new dynamic equilibrium supporting its own and its stakeholders’ purposes.

Learning discursive work in the knots

The foregoing discussion explores, within the context of the Child Learning Laboratory negotiating expansion of this knot, the first question proposed for this paper, *What unique discursive work is implicated in knotworking?* Of course tensions were carried within the knot’s everyday activities. Generally these tended to hold a certain dynamic equilibrium within the Laboratory’s predominant fluid-communal discourse. The primary discursive work appeared to

be individually negotiating the continual flux of relationships and rules while collectively establishing a strong, communal sense of purpose and values that held across the distributed physical sites and the varied mixes of practices, players and knowledges that comprised the Laboratory. As we have seen, fluctuations in the knot (in this case, caused by expansion and partnership negotiations with a more formally organised and powerful institution) occasion different kinds of discursive work. In the Laboratory example, this work sprang from confrontation and resistance that erupted at the edges of the knot, leading to learning in self-definition, developing a strategic solidarity and temporary but flexible positioning, and clarifying relationships with partnering institutions that guaranteed peaceful co-existence.

The second question is, *What knowledge and capacities are learned in this discursive work?* Several forms of knowledge appeared linked to the work demanded by participation in the Laboratory knot: mapping, translating, rearticulating, spanning boundaries among discursive communities, and generally becoming attuned to shifting discursive patterns that emerge in negotiations among different constituents. The analysis to this point illustrates the importance of being able to map the shifting discursive patterns and power asymmetries among discourses. Deleuze and Guattari (1988) explain mapping as different from tracing or representing: in contrast, mapping is ‘an experimentation in contact with the real . . . the map has to do with performance’ (p. 12). Following this notion, Edwards and Usher (1997) propose that in organisational configurations of fluid interactivity, mapping in these terms is a key capacity, experimenting with the real to locate oneself and others and engage with the other.

Neither the CSD coordinator nor the original principal appeared aware of their own or others’ positions in relation to the knot. Nor did they shift strategies in response to the effects of managerial-structural discursive strategies with Laboratory actors used to loose connections and

informal everyday relations. In fact the original principal's self-perception was that he was the 'one most committed to open communication'. Never learning to vary his approach of imposing CSD frames upon the negotiations despite its evident negative effects, he experienced such distress that he left on medical leave.

Besides awareness and mapping of discursive patterns, a capacity for translation appears important in knotworking: rendering phenomena comprehensibly and accurately in a different language and context to those of the site where it originated. The Laboratory participants struggled to find an entry point to understand or communicate within the authoritative language of the CSD negotiations. As a knot without a centre the Laboratory lacked unified procedures and authorities: colliding with a highly formal bureaucracy it appeared 'pretty naïve' in the words of one teacher. The resistant discourse was successful in mobilising parental empowerment, voice and investment in the Laboratory: but it splintered the knot's balanced flow of actors and activity, drew clear boundaries, and demanded new discursive strategies. Key to finding new balance, incorporating expanded participation of the City School District in the knot, was the parents learning to translate their meanings into the CSD's discourses. Parents learned to articulate the Laboratory's needs and language into managerial-structural terms, and to adopt the rules of this discourse to position their cause and demands. However the mobilisation of this capacity also dramatically tightened the knot's essential fluidity, as its informal relational talk became increasingly replaced by memos and regulation.

A further example of translation was evident when the Laboratory finally moved a classroom to a CSD school. Although some school teachers and parents were unhappy about the Laboratory activities taking place on their premises, the Laboratory teacher actively undertook necessary cross-boundary discursive work to help dissolve the fear and distrust: she invited other

teachers to observe her classroom, displayed Laboratory children's work in school hallways, and generally attempted to translate the Laboratory processes of continuous project-based inquiry and 'fluid walls' to the school's members in their own language of subject curricula, student outcomes, and achievement indicators.

Besides those who assumed informal leadership roles in the knotworking, a complex web of formal leaders flowed throughout the knot's shifting configurations. Apart from the outgoing and incoming principals of the school where part of the Laboratory was housed and their city school district's administrative structures, the Laboratory's part-time Director was a university professor passionately committed to its project-oriented work. As tensions erupted in the Laboratory's shifts, this Director took on a role defending its integrity. Laboratory teachers, particularly the assistant director, began to resent her totalising the programme in a particular way, casting its fluid activity as 'her programme' and negotiating a partnership on their behalf. She retired and the Laboratory appointed a new director, a former professor and senior administrator in the provincial education ministry. This person's leadership was considered important by most parents, teachers, and CSD administrators in finally resettling the balance of the knot. In particular, the new Director was described as excelling in language strategies of articulation and translation. Parents claimed she understood their perspective then mirrored it back to them in language capturing the nuances of their meanings and feelings. Teachers claimed that she explained various partners' meanings to one another, adeptly translating concepts into different community's terms. She was also perceived by parents, teachers and principals to understand and steer them safely through the political systems at work behind the negotiations, in the larger discursive communities of the university and the school district.

Clearly, these ongoing discursive negotiations open learning opportunities for individuals and organisations. A dramatic example of this was afforded in the contrast between the new CSD school principal who replaced the original principal who left. Self-described as nervous about her performance in her first administrative position and intimidated by the conflicts among the partners in the Laboratory, she at first adopted the former principal's representation of the situation as a 'problem' of defusing the parents' power, using rational terms and a structural approach:

I'm not a power person but I think I acted like a power person. . . . I wanted to take control of everything so I didn't screw up and I didn't understand the nature. . . . I was viewing the Laboratory like I viewed alternative programmes. It's my job, I'm going to be held responsible for this, you can have input but I make the decisions. And I didn't understand that the Laboratory was different and I was not listening to [Laboratory participants] as much as I should have.

Parents complained that she was unavailable and uncommunicative, which she found hurtful. She listened harder, and began to discern the unique amorphous qualities of this Laboratory knot: 'There's many different stakeholders and many different groups that meet and they're all quite articulate and able to get their voice heard. So that was a lot of learning for me. And you can step on them without having a clue that you've stepped on it.' She also began to recognise conflicting discourses coming together in common terms like 'research': which to her as City School District staff meant short-term, applied research to improve student achievement, but to Laboratory workers meant long-term basic research into learning and pedagogy. She began to map her own position as a translator: 'I think my job is helping other people understand the complexity and see other perspectives. That's been a challenge for me.' This principal also conceptualised the negotiated partnership as just the beginning of a long term project in the communication labour of listening, translating, and signaling discursive work as learning opportunities: 'This is ongoing work.'

Concluding Remarks

For educational administrators, the foregoing discussion offers conceptual tools to understand the discursive dynamics and learning possibilities in inter-organisational collaborations. In this case of collaboration to operate a Child Learning Laboratory among a university, school, school district and a parent executive board, the notion of ‘knot’ proposed by Engeström *et al.* (1999) was used to illustrate the discursive work and capacities learned among the constituent organisations. The Child Learning Laboratory described here was an identifiable identity integrating teaching, learning and research, but demonstrated knot-like characteristics of decenteredness, loose connections, informal norms, and an ongoing mix of interaction among contributors, tasks and tools. Different interests, meanings and practices had to be negotiated continually in the Laboratory knot, often through everyday improvisation.

Actors and particularly educational administrators within the knot had to learn to tolerate the permeable open shape of its configurations and the everyday improvisations through which its programmes and decision-making emerged. This was not easy, particularly for those administrators accustomed to formally codified regulations, or clear structures, authorities, and chains of accountability. The everyday discursive work in a knot such as the Laboratory involved active participation in micro- and macro-level decisions, boundary clarification, solution creation, and relationship development. Little was routine or automatised or delegated to specialised actors. This work consumes so much daily energy that the knot might be expected to burn itself out in the long term. However, given the relative (continuing) longevity of the Laboratory and the personnel that flow through it, this is clearly not the case.

The case also demonstrates, however, that while everyday practice in the knot itself demands fluid and continuous informal negotiations of meanings and procedures, knots are not

benign islands of interconnectivity. Power relations fluctuate in the pulsations of the knot's activity over time according to changing interests and resources of member organisations. While the knot is an actor itself in negotiating these pulsations, actors within the knot form shifting coalitions and align themselves with different discourses. Particularly towards the edges of the knot, where it overlaps with other organisations and entities, discursive learning appears to involve an acute attunement to shifting discursive patterns that emerge in negotiations among different constituents, strategic use of discursive patterns, borrowing and translating languages, and spanning discursive communities. This work involves particular capacities for continuous improvisation and resilience that, in this case at least, were demonstrated only in certain sectors or individual actions within the knot. The sustainability of the collaboration appears to rely partly on frequent, flexible 'mapping', in the rhizomatic sense, undertaken by some knotworkers: experimenting with interactions and connections, identifying different locations of oneself and others, re-positioning and re-connecting. These sorts of strategies are consonant with research on collaborative problem-solving processes employed by 'experts', reported by Leithwood and Steinbach (1995), emphasising an ability to think flexibly. In particular, these leadership strategies included well-developed plans for collaborative problem-solving, checking interpretations of the problem, clearly indicating one's own view without intimidation, remaining open to new information and changed views, balancing focus with open discussion, and assisting collaborative problem-solving by synthesising and monitoring (Leithwood and Steinbach, 2005: 127-128).

This work is conducted as much in local, everyday informal conversations as it is in formal meetings and crafting of partnerships. Those who thrive in the knots appear to be continually self-reflexive to their own implication and strategies in the unfolding languages, the

connections and disconnections, at both micro and macro levels. They also avoid imposing solutions and management technologies to gain control over the complexity that leaks out of identifiable boundaries. Educational administrators who understand the delicate discursive work in this complexity and support capacities of mapping or experimenting – learning in the knots – can help open learning possibilities for productive inter-organisational collaboration rather than shutting them down.

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