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Knowledge Management in School Boards

by
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This report is a summary of a Doctoral dissertation by Dr. Paul Newton, College of Education, University of Saskatchewan. The purpose of this study was to examine knowledge management, or how boards learn collectively, in three school boards. This report includes:

- ✓ A review of the literature on knowledge management and governance.
- ✓ Knowledge management conceptualized as a phenomenon composed of four elements: (1) structural/political; (2) axiological; (3) social/relational; and (4) cognitive.
- ✓ Cognitive elements were found to be strongly influenced by values and collective interpretation schemes, group communication patterns, and the structural and political environment.
- ✓ The four elements of knowledge management are not discrete, but interact with each other within the process of knowledge transformation and knowledge transfer.

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Introduction

Recent movements toward school reform have brought a new vocabulary into the public domain. Terms such as public accountability, school choice, learning communities, and stakeholders have implications for school board governance, decision-making, and policy. At the same time, societal pressures and reduced funding from government have resulted in many difficult decisions and challenges for Canadian school boards. Consequently, the issues facing school board members are complex.

Much of the literature on board effectiveness emanates from the corporate sector and suggests that organizations should acquire the necessary expertise by recruiting qualified board members. As elected boards do not have the luxury of acquiring experts to sit on their boards, it is crucial that these boards acquire expertise through other means, namely through individual and group learning.

Wildavsky (1987) stated that the three conditions necessary for citizenship are autonomy, reciprocity, and learning. It is this third condition that is the focus of this study. Although much has been written about traits of effective boards, there has been scant discussion of how boards might learn collectively. There is a need for an examination of the knowledge base, knowledge transfer processes, and knowledge transformation processes that exist within school boards. I refer to these three elements as knowledge management.

Knowledge management in school boards depends on a multitude of variables and conditions. Typically, directors of education and superintendents are viewed as educational experts and school board members rely on the director's and superintendent's professional knowledge and skills to direct them in policy development. Zlotkin (1993) suggested that "the traditional trustee-superintendent relationship is based on (1) a lack of independent knowledge, or direct access to knowledge, on the part of the trustees; and (2)

an expectation-by both parties-that the paid employee (the superintendent) should be the expert and do the work” (p. 22). She further argued that this is an unacceptable situation. The challenges of educational restructuring, combined with efforts to build relationships with the community and the increasing frequency of superintendent turnover, necessitate a more prominent role for the board in governance and decision-making. Leighton and Thain (1997) stated that in order for board members “to fulfil their duty, [they] should have sufficient information to enable them [the board] to make knowledgeable decisions on matters coming before the board” (p. 182). This includes knowledge of the essential business of the organization. In many cases, school boards depend upon administration to provide the knowledge necessary for decision-making. As I discuss further in chapter two, this is not always an ideal arrangement.

One of the recommendations of a Canadian School Boards Association (1991) study of school board effectiveness was better training and development for board members. Underlying this concern for training is the notion that board members may be ill prepared in terms of the process of board work and also the content knowledge about the education sector. Formal training programs focusing on the process of board work were not the object of this study. This study was concerned with the informal learning of board members about knowledge of the education sector as well as the normative context of the community and the school system. This study focused how knowledge was transferred and transformed within school boards. School boards can be learning communities that build knowledge collectively. Although building a learning community is a difficult task, collaboration, consensus, and commitment are characteristics of a learning community that are worth cultivating.

The focus of inquiry in this study was how three school boards managed knowledge. Knowledge management was studied through the examination of retrospective critical decisions that these school boards faced. This paper presents a summary of the study, an overview of the methodology used, and the findings.

Much of the literature on board effectiveness emanates from the corporate sector and suggests that organizations should acquire the necessary expertise by recruiting qualified board members. As elected public sector boards do not have the luxury of acquiring experts to sit on their boards, it is crucial that these boards acquire expertise through other means, namely through individual and group learning. Marquardt (1996) argued that the emphasis on board member knowledge is antiquated given the rapid social and economic changes of the past few years. “What organizations *know* takes second place to what and how quickly they can *learn*” (p. xvii). The primary assumption of this study was that the functioning of a board lies in its ability to learn or to collectively manage knowledge.

PART I: KNOWLEDGE MANAGEMENT AND GOVERNANCE: A REVIEW OF THE LITERATURE

The development of a process to explore knowledge management in school boards, requires that one articulate the nature of expert knowledge and examine how knowledge can be transferred among board members, and thus to the collective. School board meetings are replete with information. This, in and of itself, does not constitute learning or knowledge transfer. Dixon defined knowledge as the links people make in their minds among information, action, and context. Knowledge, therefore, is a composite concept dependent on information, the meaning that individuals make of information, and the application of information in a specific context. From the literature on governance, organizational learning, and the psychology of expertise, four principal elements of knowledge management were inductively identified: political/structural, social/relational, axiological, and cognitive.

Structural and Political Elements of Knowledge Management

In 1991, the Canadian School Boards Association conducted a school board effectiveness study. The key recommendations of the study centred on factors such as

monitoring and evaluation, clear distinction of board member/CEO roles, and relationships between the board and administration. These recommendations closely align with indicators of board effectiveness as identified in the literature on corporate board governance (Conger, Lawler, & Finegold, 2001; Leighton & Thain, 1997; Saskatchewan School Trustees, 1997). From the literature on governance, five major areas of the political environment were identified: board member roles, administrator roles, the role of information and influence, the role of teamwork, and the role of evaluation in governance.

Axiological Elements of Knowledge Management

There are ethical and normative, as well as political, implications to the use of knowledge. School boards are required to understand the ethical obligations of trusteeship. Smith (1995) argued that “technical. . . training does not necessarily confer moral and political insight” (p. 29). One of the main functions of boards is their responsibility to the wider community. He further argued that trustees primarily occupy a moral role; “they [trustees] must be prepared to think about the moral quality of the services they are offering” (p. 101). He suggested that a board should be “a community of interpretation” (p. ix). A primary purpose of a community of interpretation is the responsible discussion of conflicting purposes.

Marquardt (1996) referred to values and assumptions as “perceptual filters” that group members use to select and modify learning and knowledge. Salomon and Perkins (1998) posited that organizations are made up of individuals with differing values and that those values act as filters of information. Levine and Moreland (1999) identified organizational values as one dimension of shared knowledge. They stated that organizational values involve “accepting the moral framework that ostensibly underlies organizational activity” (p. 270). Clearly, values are involved in decision-making, problem-solving, and group learning. For that reason, knowledge transfer and

transformation must account for values and assumptions, as they have a significant bearing on outcomes.

Social Elements: Group Interaction and Communication

Thompson, Levine, and Messick (1999) stated that recent research has focussed increasingly on the social elements of cognition. Social psychologists and organizational theorists have begun to explore cognition as not only an individual phenomenon, but as a social phenomenon.

Researchers of small group decision-making argue that the quality of communication among group members is key to understanding the effectiveness of group decision-making. Information that is shared by group members, as opposed to unique or unshared information, is hypothesized to be more significant in group decision-making. In other words, information that supports the position of the group and of the alternative being presented is used, while information that rejects the alternative or the position of the group is discounted. Wittenbaum (1998) stated, “groups are more likely to discuss information that is collectively held by more than one group member (shared information) at the expense of exchanging information that is uniquely held by a single member (unshared information)” (p. 58). The propensity for group members to select shared information is referred to as group-level information sampling theory. This “theory predicts that groups will spend most of their time talking about information known to many or all members and rarely identify information known to only individual experts” (Devine, 1999, p. 610).

Although much of the literature on small group decision-making points to the value of unshared information, Stasser (1999) suggested that there are considerable benefits for groups that use shared information. The amount of shared information that a group possesses is referred to as “cognitive centrality” (p. 66). Group members who possess a level of cognitive centrality are often perceived to be experts by other members of the group. Boles (1999) stated that shared information and knowledge provides “social

validation for individual beliefs and creates socially shared realities” (p. 339). Shared realities result in group members feeling more confident in decision-making and allow for group cohesion and trust to develop. This is particularly important in conditions of uncertainty as shared realities permit group members to believe that “one’s own uncertain views are now reliable, valid, generalizable, and predictive” (p. 340).

Cognitive Elements

Sena and Shani (1999) referred to two types of knowledge as tacit and explicit knowledge. Tacit knowledge is “intuitive, bodily, interpretive, ambiguous, nonlinear, and difficult to reduce to a scientific equation” (p. 8.6). Explicit knowledge is “formal, unambiguous, systematic, falsifiable, and scientific” (p. 8.6). It is the vast procedural knowledge (or tacit knowledge) of experts that allows them to perform tasks with more efficiency than novices. Expert knowledge includes procedural knowledge that acts without conscious thought and therefore, experts are much quicker than novices in solving problems. (Gordon, 1992).

Baumard (1999) referred to four types of knowledge transformations within organizations. These are: (1) articulation, tacit to explicit knowledge transformation; (2) combination, explicit to explicit knowledge transformation; (3) internalization, explicit to tacit knowledge transformation; and (4) socialization, tacit to tacit knowledge transformation. Articulation occurs when knowledge that is tacitly known to individuals or to the collective is uncovered through various processes including discussion and reflection. This type of knowledge transformation “is realized daily in organizations. The institutionalisation of tacit rules as internal regulations is a good example” (p. 24). Combination occurs when explicit knowledge is transformed into other forms of explicit-individual or explicit-collective knowledge. One of the important elements of knowledge combination is compatibility of the explicit knowledge structures in which “one series of characteristics is compatible with another series of characteristics” (p. 25). The selection and categorization of knowledge that is to be combined is subject to an interpretation

scheme that determines the suitability and acceptability of the explicit knowledge. Internalization occurs when explicit knowledge structures are interpreted by individuals and groups and become deeply ingrained, automatic knowledge structures. Group members internalize new explicit knowledge when they make meaning of the knowledge and generate new tacit knowledge. Baumard used the example of prisoners' knowledge of being watched by guards. Once the prisoners have seen the guards watching them, it is not necessary for the prisoners to see them all of the time to have tacit knowledge of the possibility that they are being watched. Socialization occurs when people in organizations transfer knowledge without codifying the manner in which the knowledge is being transmitted or is being received. "The principal characteristic of socialization is its resistance to codification" (p. 26). In socialization, the transmission of the knowledge is not made explicit and the receiver of the knowledge does not consciously codify the new knowledge structures into categories, types, etc. This is how the development of "know-how" takes place in master-apprentice relationships.

PART II: UNCOVERING KNOWLEDGE STRUCTURES IN BOARD DECISION-MAKING

This study examined the knowledge of a group as a collective system of knowledge. To do this, the knowledge dimensions of tacit to explicit as well as individual to collective were studied. To examine each of these types, different methods were employed. Explicit and individual knowledge can be articulated by research subjects, and were therefore subject to traditional interview and observation techniques. Tacit knowledge, because it resists articulation and expression by the individual, cannot be studied through standard knowledge elicitation techniques. "It is essential that knowledge elicitation methods include some means of representing the contribution made by tacit knowledge and by perceptual learning" (Klein, Calderwood & MacGregor, 1989, p. 463). Therefore, the Critical Decision Method (CDM) was used, which is a processes of

reflexive practice applied to retrospective non-routine incidents. “Although the CDM shares many features with other interview methods. . . it offers some specific features that distinguish it from these and other knowledge elicitation strategies” (Klein et al., 1989, p. 465). Reflexive practice is one important element, but the CDM has the additional features of a focus on non-routine incidents and on cognitive probing that uncovers the underlying tacit knowledge structures that are present in decision-making. It is non-routine events that provide the richest and most useful information about knowledge transformation. The CDM “is a theory-driven strategy that is based on the assumption that expertise emerges most clearly during nonroutine events and focuses on these as the prime source of information” (Klein et al., 1989, p. 471). A variant of the CDM was used that focused on group interviews rather than individual interviews to elicit the individual and collective tacit knowledge structures of the boards being studied.

Design of the Study

The provincial school boards’ association nominated several boards that were functional, on the assumption that elements of knowledge management were more likely to be present in these boards than in dysfunctional boards. From this list, three school boards were selected that were conveniently located so as to ensure maximum access to the sites.

A survey was administered that asked each board member and administrator about their beliefs and perceptions about the purposes of education, the roles of board members and administrators, the role of information, the role of teamwork, and the role of evaluation. This survey was based on a five-point Likert scale with 1 being strongly disagree and 5 being strongly agree. The surveys administered at the beginning of each case were analysed and compared with political and structural indicators of board effectiveness identified in the literature (Canadian School Boards Association, 1991; Conger et al., 2001; Leighton & Thain, 1997; Saskatchewan School Trustees Association

et al., 1997). The data were also examined for alignment on response items between board members and administrators.

The boards were audio taped and video taped and the data were analysed using conversation analysis to identify patterns in communication and interpersonal interaction among board members and administrators. This allowed for not only the content of the discussions and the responses to the cognitive probing to be recorded, but also for other clues to tacit knowledge and group dynamics to be analysed.

Critical Decision Method (CDM): Eliciting Tacit Knowledge Through Reflexive Practice

Each group was asked to tell about a time when the board faced a critical decision. The temporal elements of each story were verified by a search through board minutes and the decision points were identified. Finally, I returned to the boards with structured questions designed to probe the variety of knowledge structures that were employed by the boards in resolving their critical decisions.

Cognitive Probing.

Once the incident timeline and decision points were established, the CDM used cognitive probes to elicit the tacit knowledge used by the group during each decision point of the non-routine incident. The cognitive probes asked questions about: cues, knowledge, analogues, goals, rules, experience, training, time pressure, situation assessment, and hypotheticals.

Findings

Each board discussed a number of incidents that had taken place over their tenure. The following is a description of each school board and participant summary of each of the critical decision narratives.

The Prairie School Division was a small rural school division in Western Canada with an enrolment of approximately 1200 students from Kindergarten to Grade 12. Understanding the board culture of this governance team required an understanding of the nature of leadership from the director of education. The director was a colourful individual who set the tone, both in terms of the tenor of meetings and the approach to governance. The governance team was one that negotiated the issues through story telling and the construction of a collective board history.

The board recounted the story of an incident that took place in January of 2000, in which a bus driver had left a disabled student on the school bus for the entire school day. The incident took place during winter, and although it was a relatively mild day, the time of year of the incident played a part in the seriousness of the event.

The Director of Education added some of the details that took place between the time that the incident took place and the board meeting the following day.

I got notified at 3:20... and went over and verified that everything was okay.... I contacted [the board chair] that evening or early the next morning.... And after I had made sure that the child was safe, and I talked to [the secretary-treasurer] and said do we have to meet with the bus driver, because we have to hear his side.... But then in the morning, [the secretary-treasurer] and myself and [name omitted] the bus supervisor, met with [the bus driver] and got his side of the story. So we went through that process and we offered [the bus driver] the opportunity to state his case to the board, because they are the board, the employing board. And they make the decision to terminate contracts. I make recommendations as to whether a contract is terminated or not.

The Board Chair discussed the board's response to the news that this girl had been left on the bus and outlined the events that unfolded at the board meeting that followed.

First we talked to the parent of the little girl, and then we talked to the bus driver.... Unfortunately, in interviewing the bus driver, we didn't come away with the feeling that he understood those things, and certainly didn't have a solution to prevent the problem from happening again.... So we discussed it for quite a while and decided... to take his name off the spare list, and we asked the bus supervisor to take the record of our decision over to him and to tell him that if he had any problems with that or had anything more to tell us, that he could contact [the secretary-treasurer] to hear him at the next meeting.

The St. Ferdinand School Division was a medium-sized urban Catholic Separate division in Western Canada. This governance team operated in a formal manner. This board modelled itself after the Carver (1990) policy-governance model and the director continually reminded the board members of the duties of governance when he believed they "strayed" into administration.

The members of the governance team recounted a story of a challenge to the learning resources being used in the school division. A delegation requested permission to speak to the board in December of 2001. The delegation was concerned that students were reading the *Harry Potter* books in school and that these books were inappropriate for students in a Catholic separate school system. The director and board chair agreed that they would hear a presentation from the delegation at the next board meeting.

D: January 2002 they [the delegation] came to the board. The board received their presentation, and then recommended it to an administrative committee, as per policy.... The committee met as per policy and it reviewed the learning resource, and determined that it was appropriate and it came back to the board with its recommendations... at that meeting. There was no discussion of it at that point, although the delegation came to

hear the decision of the committee and basically the decision was made and we carried on with the business of the board.

The narrative told by the director of education lacked the character and personal detail of the previous board's narrative. The recounting of the story, however, reflected the governance team's approach to discussion on this issue. The board and administration struggled to keep a disinterested stance in discussing the events. Throughout the following sections, there were similar "factual" descriptions of the elements of the critical decision, but it also became apparent that there were significant tacit collective and individual structures embedded in the narrative.

The Branchland School Division was a small rural school division in Western Canada. There were approximately 2600 students in Kindergarten to Grade 12. Governance knowledge in this team was dynamic. Knowledge resided throughout the group, in board members, the board chair, and administrators. The board chair had great influence on the board's deliberations. The board chair was particularly knowledgeable and there were several board members who were also very informed and strong board members (one of the board members has a high profile in the provincial school boards' association).

Board members and administrators recounted the story of a set of decisions around closing schools or reconfiguring grades in a couple of small communities that were having difficulty sustaining enrolments at the high school level. The story started in October of 2001. Board members and administrators met and decided that the current level of enrolments in those communities could not be sustained and action was required to address the problem. The Director of Education stated:

It started a year ago at our Board Retreat, which was in October that year.... At the Board Retreat we looked at the difficulties associated with delivering the high school program in small K-12 schools, and specifically

related to three communities that we presently offer K-12 program in relatively small schools.

The board examined enrolment projections for the small schools and discussed the options of multi-grading. They made a decision to invite the local boards of those communities to discuss the situation to “essentially look at the same information that the division board had,” and look at possible options for program delivery in those schools.

Political/Structural Elements

The St. Ferdinand School Board survey responses showed the strongest support for the differentiation of board member and administrator roles. They responded that the primary role of the board is policy making (mean = 4.69; SD = .63), and that the primary role of administration is policy implementation (mean = 4.58; SD = .67). In the other boards, the support for the distinction between policy implementation and policy-making was less pronounced. Although it cannot be determined whether distinct roles might contribute to each group’s functioning, it was clear that distinct roles were not a prerequisite for functioning. That is, these boards were functional in the absence of overly prescriptive distinctions between board members’ and administrators’ roles. In fact, the observation of two of the three boards suggested that equality of input was of value to board functioning. This is not to say that administrative knowledge was not important, only that it was one of many types of unique knowledge present on the governance teams.

Each of the groups placed emphasis on teamwork between the board and the administration. In the Prairie School Board, governance team members responded that it is more important that the board act as a cohesive team than act to represent diverse interests (mean = 4.44; SD = .73). They all strongly agreed that the director and board members should work together as a team (mean = 5.0). In the St. Ferdinand School Board, the board members responded to the statement “it is more important that a board

act as a cohesive team than act to represent diverse interests” with a mean score of 2.33 (SD = 1.03), while administrators agreed with the statement (mean = 4.0; SD = 1.15) suggesting that board members believed that it was part of their role to represent the diversity of stakeholder positions on issues before the board. However, the responses to the statement “the director and board members should work together as a team” garnered strong support from both groups (entire group mean = 4.54; SD = .52; board mean = 4.33; administrator mean = 4.71). Board members and administrators disagreed with the statement “the school board should act and appear to act independent of the director of education” (entire group mean = 2.31; SD = 1.38). Interestingly, the variability in the responses to this question was found in administrators’ responses (SD = 1.72). Similarly, the Branchland School Board agreed that it was more important for the board to act as a cohesive team than act to represent diverse interests (mean = 4.09; SD = .83). The governance team showed strong support for the statement “the director and board members should work together as a team” (mean = 4.73; SD = .47).

The observed boards suggested a much more dynamic set of relationships between board members and administrators than was suggested by the literature. Smoley (1999) argued that boards must act independently of the CEO. The boards in this study clearly responded that board members should not act independently of the administration. The responses to the survey and the observations of the governance teams in action suggested an interdependence with, rather than independence from, each other’s knowledge. The St. Ferdinand School Board demonstrated the highest level of role differentiation. The members of this governance team, however, struggled with role differentiation, and during the critical decision, they appeared to disregard this role separation.

Axiological Elements

Findings from observation, data from the focus groups, and responses to the surveys indicated that values, opinions, and the interpretations of the administrators

played a large part in informing the values of the collective. It was also clear that the information presented by the administrators and board members was subject to the interpretations of what constituted acceptable knowledge.

Board members and administrators demonstrated some variety in their survey responses on the role of values and opinion in administrator knowledge. Administrators, and to a lesser extent, board members, responded that they provided not only information but also opinions and values in the decision-making process. Also, board members and administrators responded with strong support overall for the notion that the director puts forth values and opinions that influence board decisions. For example, in the St. Ferdinand Board, administrators responded (mean = 4.14; SD = .69) that the director puts forth opinions and values that influence board decisions, while board members' support for that statement was weaker (mean = 3.33; SD = 1.03). The tendency for administrators to respond that they provide values and opinions that are influential in board decisions, and the variability in board member responses, suggested that the role of administrators, in these cases, was not that of disinterested expert.

Social/Relational Elements

Each of the boards had their own unique way of communicating, and therefore their own unique way of sharing knowledge. In the case of the Prairie School Board, the board approached decision-making by generating consensus through the telling of stories and the use of predominantly shared information, thereby building the story about the incident collectively. The director's role was one of chief story-teller and synthesiser of the group story. In the case of the St. Ferdinand School Board, its communication patterns were transactional in nature. Governance team members spoke directly to each other and there were a number of statements of unshared information. Communication patterns were directed between group members rather than to the group as a whole. In the case of the Branchland School Board, communication was often directed to the entire group. This group generated consensus by balancing alternatives. There was little

evidence of competing perspectives being negotiated, but rather evidence of an attempt to generate a complete picture of the issue through the use of predominantly shared information.

Although the small group research literature has suggested that unshared information is indicative of effective decision-making, it was demonstrated here that boards could operate with predominantly shared information. There is an implicit assumption in the notion of unshared information as a desirable condition; more information results in better decisions. This also presupposes that group decision-making is, or ought to be, rational. Two of these school boards demonstrated a consensual decision-making approach that was low in unshared information. Rather than indicating that the decision-making of these two boards was less than rational and therefore less than optimal, it is more likely that low unshared information indicated that their decision was optimal because it reflected a consensually constructed community position.

Cognitive Elements: Tacit and Explicit Knowledge Structures Embedded in the Board Narratives

Explicit knowledge modes are the easiest knowledge modes to capture. Tacit knowledge, on the other hand, presented more difficulty to the researchers. Therefore, tacit knowledge structures are explored in considerably more depth.

Explicit-individual. In the Branchland School Board, for example, explicit knowledge was distributed throughout the group. Technical knowledge about issues resided in all members of the group. For example, the board chair spoke about industry standards for the number of mechanics required for a bus fleet. Other board members had explicit knowledge of board processes or policies. One board member had individual explicit knowledge acquired at an in-service about how to involve communities during amalgamation talks.

Explicit-collective. The school boards' mission statements and policies are a source of explicit knowledge. They are, however, only explicit collective knowledge if the group knows them. In many instances, board members may not be aware of the policies or mission statements of the board. In this case, it cannot be claimed that they have explicit collective knowledge. For knowledge to be explicit and collective, it must be known to the members of the collective. Boards that act in a way that reflect its mission statement are perhaps operating on tacit collective knowledge rather than explicit collective knowledge. It is only once collective knowledge has been codified and is known collectively that it can be explicit collective knowledge.

There were many examples of explicit collective structures in this study. Board members in the Branchland School Board referred to "our policy" when asked about information that directed their decision-making. It was evident that members of this group relied on their collective knowledge and did indeed know it in an explicit way. Explicit collective knowledge sources such as policies, board minutes, and mission statements are formal, but there are many sources of less formal explicit collective knowledge, most notably the stories told by the boards.

Tacit-individual. The tacit knowledge of the people involved in this study can be seen throughout the critical decision narratives. Terms such as "I felt," "I thought," "I sensed" were used by the participants and pointed to the existence of tacit structures within individuals.

In the St Ferdinand School Board example, group members had knowledge about the actors in the incident. A board member commented on a previous relationship with one of the people in the delegation. She indicated that a negative feeling about this person had an effect on the way in which she viewed the debate.

When I was receiving e-mails and when I looked at, and the phone calls, I looked at who sent it, and of course the one person, I had his mother as a staff nurse, and she was always on this level. And I thought, Oh God not

again. You're even getting it at board level. And so I had a mental block too, and I was glad that it went to a committee.

The board members and administrators identified members of the delegation as “fundamentalist Christians. Not only were they influenced by knowledge of the actors, but they also had knowledge of the type of people that might think in a similar, “literal” fashion. One board member commented:

I was pleased that we did not allow a group of minority radicals to infiltrate the way that we teach the Catholic dimension.

This was a powerful individual tacit structure that had a great impact on the group decision-making process.

In the case of the Prairie School Board, the director spoke of a statement made by the board chair (BC) that pointed to a tacit rule of thumb in use by BC. He stated, “I remember [BC] saying you make mistakes, but there are some mistakes you just don't let go.” The heuristic in use here was two-fold: (1) employees are permitted to make mistakes and should be forgiven, and (2) mistakes that put the health and safety of children at risk cannot be forgiven. The BC indicated that the second part of the heuristic supersedes any rule that would allow for forgiveness for the employee. A board member articulated a tacit knowledge structure that was held by many members of the governance team. He pointed out a tacit structure by saying “that's the feeling I had” in referring to his expectation that the employee would come to the board and tell them what he did wrong and what he was going to do to remedy the situation. This was a common tacit knowledge structure among board members and administrators. Many of the participants indicated that the major factor in recommending dismissal was the unwillingness of the employee to accept some responsibility.

Tacit-collective. There were also tacit collective structures embedded in the critical decision narratives. Board members and administrators referred to “we felt,” “the

board felt,” “we think” when discussing the issues confronting the board. There was considerable overlap between tacit individual and tacit collective knowledge structures. That is, tacit collective structures were also, at least in part, tacit individual structures. Tacit collective structures resided in the group, and evidence of these structures was also found in individuals, but it is the manner in which these structures were transformed and utilized that made it collective knowledge. Baumard (1999) stated, “The existence of collective knowledge does not presuppose the homogeneity of this knowledge. It may be entirely heterogeneous, but nonetheless belong integrally to a community” (p. 21).

In the Prairie School Board example the board chair stated, “we didn’t come away with a feeling that he understood those things” signalling that the board had generated a collective knowledge structure about the state of mind of the employee. Certainly, there could have been an explicit dimension to their knowledge about the employee’s state of mind, but the BC used the term “feel” which suggested a tacit collective response to the employee’s statement. It was expected that this “feeling” was made explicit in subsequent discussions, but a tacit understanding of what ought to happen, combined with the group’s experience of what actually happened, resulted in the emergence of a group tacit response. This response resulted in ambiguity, as the board felt confusion when their expectations about what ought to happen did not occur. Similarly, when the BC spoke of “what we were looking for,” he pointed to the tacit collective expectation held by the group.

In the example of the St. Ferdinand School Board, the most significant collective tacit knowledge structure was the interpretation scheme that the board used to assess the validity of the information coming from the delegation. The director made explicit the interpretation scheme of the governance team when he suggested a strategy for dealing with a delegation’s interpretation. He stated, “this is probably one of the rules of thumb you’d go with around interpretation and diversification, you would stand little to gain around interpretation. And so the board said, we’re not here to do that. We will receive

what they say, and might ask a few clarifying questions.” He made this interpretation scheme explicit, but he did not create it. The scheme already existed collectively. Board members knew that the delegation held a different interpretation than the governance team, but their knowledge of their own interpretation and how it differed with that of the delegation was tacitly held. This interpretation scheme was a powerful determinant of the types of new knowledge that the group would admit. The fact that the board chose not to entertain a debate of interpretation meant that the interpretation scheme of the group remained tacit.

Cognitive Elements: The Transformation of Knowledge in School Boards

In the Prairie School Board, the comments of the board chair clearly indicated that there was considerable movement and development of knowledge structures during board deliberations. The board chair stated that he was leaning toward being in favour of supporting the employee at the outset of the process, but his feelings about what ought to happen changed as the meeting progressed. Given that he saw such a revision in his thinking about the issue, there must have been some dynamic knowledge transfer process taking place within the board.

Articulation. In the case of the Prairie School Board, the communication patterns witnessed were primarily of positive information valence. The group members built a collective story of the incident and transferred some of their tacit knowledge (indicated by terms such as “I felt,” “I sensed,” etc.) to others through the process of articulation. The group members held tacit knowledge structures concerning how people in their local communities might react to the situation. They may have explicit knowledge of the sentiments in their communities, but a large part of what they knew about the communities they represented was tacitly held and was expressed as feelings about the issue or a sense of the issue. The “sense” of how the communities might react was actually a complex tacit knowledge structure that is developed through the board member’s immersion in the culture of the community that they represent. These tacit

knowledge structures were representations in the group member's minds of the complex realities of the external environment. When the group members spoke of the sense they had about the communities' reaction, they were rendering this knowledge at least partly explicit.

Combination. In the Prairie School Board, the secretary/treasurer stated that she would be able to provide articles to the board members if they wanted to learn more about the issue. She also shared explicit knowledge about similar cases in other jurisdictions. Board members read board materials together at the board meetings and, in this way, explicit knowledge was transformed into explicit collective knowledge. In this governance team, the communication patterns indicated a high level of explicit to explicit knowledge transformation.

Internalization. Internalization of the knowledge structures embedded in each board's mission statement was evident in each case. The primary concern of the Prairie School Board was the welfare of children. This concern was both tacit and explicit, but the tacit elements witnessed in the critical decision narrative were a result of an internalization of the mission statement at some point prior to this study. Similarly, the governance team of the St. Ferdinand School Board had internalized the notion of distinctiveness (from its mission statement) as demonstrated in its adoption of a tacit Catholic interpretation scheme. The Branchland School Board had clearly adopted and internalized the value of small schools as articulated in its mission statement.

Socialization. Socialization is difficult to observe, as it is a direct transfer of non-codified knowledge between participants. It could be inferred that such transfers took place in the statements of participants and the communication patterns used by the groups. In the Prairie School Board, the director stated that he had the same feeling that the board members had about the incident. This was evidence that there was likely some tacit-to-tacit knowledge transfer occurring within the governance team. He added that the

administrators and board members were closely aligned on this issue, as they were for most issues facing the group.

There was evidence in the group communication patterns of a transfer of tacit knowledge of how the governance teams ought to interact. Board members and administrators communicated in similar ways within the groups and this suggested that there had been tacit to tacit transfer about the proper forms of interaction for each group. In the St. Ferdinand School Board, for example, the group members had been socialized to use a transactional approach as the appropriate form of interaction, while in the Branchland School Board, group members had been socialized into a pattern that relied heavily on communication to the entire group rather than between individuals.

Part III: SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The implications of this study are discussed in three broad areas. This section first discusses the implications for theory in governance and knowledge management. Secondly, it explores the implication for school boards. Finally it suggests directions for future research in the areas of governance and knowledge management.

Implications for Theory

This study showed that the indicators of effectiveness do not capture the diversity of board practices that can exist in school boards. In particular, the diversity of roles and relationships that existed in each of the governance teams suggested that an integrated approach to roles rather than a differentiated approach might be successful under certain conditions. Board effectiveness indicators assume homogeneity of environmental factors and therefore do not adequately address contextual factors in configurations of board effectiveness. It may be that there are several configurations of effectiveness indicators that would be compatible depending on board culture, group values, and other contextual elements. School boards in large urban settings, boards that are highly politicized, boards

in small communities, and boards that work by generating consensus undoubtedly require different configurations of board practices and characteristics. It may be more significant to focus on how the four elements of knowledge management are configured and how the elements interact rather than whether indicators of effective practice are present. That is, for board practice to be properly understood, it should be viewed holistically as a combination of interrelated elements.

I suspect that the indicators of effective practice for public sector boards are considerably different than those for private and non-profit sector boards. The primary responsibility in school boards is to the public good, not to shareholder value. This, I suggest, has a bearing on the nature of the roles and relationships in school boards. The “healthy” independence and role differentiation suggested in the corporate board effectiveness literature (and also much of the school board effectiveness literature) centres on the accountability owed to shareholders by the board. This is contrasted with a sense of collective responsibility for the public good in which the administrators and board members are working toward achieving collective goals. Further, if the political and structural elements of the two types of boards differ, the configuration of the other elements of knowledge management will differ.

The cognitive processes involved in each of the groups studied were complex, and relegating transformations to discrete categories was difficult. Tacit-individual structures, for example, existed simultaneously as explicit and collective structures. As Dixon (2000) suggested, tacit structures are at least partly explicit. Consequently, multiple transformations are taking place simultaneously. Baumard (1999) used the example of a baker to demonstrate how knowledge transformations take place. This type of example is overly reductionist and simplistic. Such a model of knowledge transformation in school boards is limited in capturing the complex nature of knowledge transformations that take place when the task described is, by nature, a collective task.

The social elements and communication patterns observed were varied. Each group had a distinct approach to group communication and interaction. Each group's approach demonstrated commensurability with its approach to decision-making and to numerous contextual factors. I posit that social interaction and communication patterns were integrated with group culture, approach to decision-making, group values, and cognitive elements, and that the type of communication needed to be commensurable with the other contextual factors.

In one group, cognitive conflict was high and communication patterns were transactional (there was a high level of between group member communication). This was not the same in the other two boards. The other groups demonstrated low levels of cognitive conflict and communication directed toward the group as a whole. Devine (1999) argued that cognitive conflict is seen to promote the communication and use of unshared or unique information. "Cognitive conflict refers to disagreement or controversy over the best way to achieve a group goal or objective; it has been distinguished from affective conflict which is personal in nature" (p. 612). Cognitive conflict assumes an objective/rational approach to decision-making. The assumption is that a group benefits by having at its disposal all of the knowledge and information available to individual group members, and because of the wealth of uniquely held information, the correct or best decision can be made. This may not be the case, as a best decision in school system governance may not be realistic or even definable. The literature on cognitive conflict would suggest that those boards that had low cognitive conflict were not effective. The opposite appeared to be true. The distinction here is epistemological. If a "best" or "correct" decision is not possible, then the presence of a socially constructed decision, negotiated and collectively held, is another option. A socially constructed decision may well be developed in an environment with low cognitive conflict. The school boards in this study made decisions by generating collective values and shared perspectives.

The use of shared information in groups creates shared realities (Boles, 1999). Shared realities result in group members feeling more confident in decision-making and allow for group cohesion and trust to develop. This is especially important in conditions of uncertainty as shared realities permit group members to believe that “one’s own uncertain views are now reliable, valid, generalizable, and predictive” (p. 340). The school boards in this study demonstrated how shared realities result in collectively negotiated decisions. Although it is possible that a high level of shared information can result in less than optimal decisions due to a paucity of information, it was clear in this study that shared information contributed to optimal decisions because it resulted in consensually constructed community positions for each of the school systems.

Knowledge management in school boards is characterised by complexity and by the integration of political/structural, social/relational, cognitive, and axiological elements. An examination of knowledge management in boards requires that an accounting of the manner in which these four elements interact with each other take place. Knowledge management, therefore, is a composite concept. It is not merely the cognitive elements involved in moving knowledge around the organization, but all of the elements listed above and the way in which they interact to generate shared understandings and shared knowledge. Any one of the elements, if studied in isolation, would not have given a robust or meaningful picture of knowledge management in these three school boards. Knowledge management must take into account not only cognitive elements, but also the values and interpretation schemes that are instrumental in integrating knowledge structures into the collective, the social interaction patterns that are the primary mechanism for knowledge transfer, and roles and relationships that determine how new knowledge is generated and distributed.

Implications for School Boards

New board member induction often focuses on training around board processes and protocol. If there are many different effective board configurations that are context dependent, it would be beneficial for board member induction to focus on enculturation or orientation to the context of the board. Board members in this study expressed concerns that elections would be taking place and incumbent turnover might mean a loss of effectiveness. In the cases of these boards, induction should focus on retaining what they already have – a culture that supports knowledge management. Less emphasis should be placed on global definitions of roles and processes and more placed on replicating how things were done successfully in the past in the specific context of the group. This means induction and training should focus on replicating the existing culture, induction into the social life of the board, communication patterns, values and norms, organizational stories, and all elements of the sharing of cognitions. Of course, the converse is also true; enculturation into a dysfunctional board culture will mean that existing cultures that do not support knowledge management will be replicated. In either case, a decision must be made by the group as to whether the existing board culture ought to be replicated or whether the board culture ought to be created anew.

This study suggested that there are two types of experience that are influential in building knowledge structures. These are environment relevant experiences and task relevant experiences. Board members bring a wealth of environment relevant experiences to the board, but consideration needs to be given to building task relevant experiences. In this study, there was more task relevant experience found with administrators than with board members. It is not surprising that administrators have more task relevant experience and that board members have more environment relevant experience. What was clear in this study, however, is that task relevant experience and environment relevant experience are not exclusive to either administrators or board members. It was also evident that task relevant experience was of benefit to board members. Given this, it

might be useful for board members to participate in simulations of similar tasks or participate in “internships” with administrators to enhance their task relevant experiences.

Role differentiation has been suggested as a way to improve governance. As was demonstrated in this study, structural considerations, such as role differentiation and board independence from management are part of a larger, more complex set of conditions that determine the quality of knowledge management. The fact that the St. Ferdinand Board struggled with role differentiation suggested that this approach to structuring the governance team was in conflict with other elements of the context. If boards are to consider role differentiation or a particular approach to group communication, for example, these elements must be considered within the full configuration of group values, group interaction patterns, approach to decision-making, cognitive structures, political/structural arrangements, and board culture. Complementarity among elements may be key to the efficacy of the group as a whole.

Implications for Administrators

Administrators are responsible not only for empowering board members, but also for enabling them to successfully work as team members by training them and providing for practice of the skills of organizational learning. Administrators need to cultivate consensual decision-making through practice and provide opportunities for board members to develop task relevant experience through mentorships or “internships.”

Administrators should examine their own beliefs about role differentiation. They need to ask whether their desire for differentiation addresses their need to maintain autonomy or control over their work or whether it addresses the needs of governance in their school system. An administrator who strives for consensus in governance ought to consider the alignment of the structural elements of governance with other elements. In other words, if an administrator believes that school boards primarily function as an accountability mechanism, then role differentiation and independence of board and

management may be appropriate. However, if an administrator believes that the purpose of the board is to express community values and demonstrate community ownership, then integration and interdependence of board and management may be appropriate.

Recognition of the model for collective knowledge management would give administrators an understanding of the nature knowledge enhancement on school boards and an approach to knowledge enhancement on the board. All four of the elements of knowledge management should be examined to determine the best configuration for governance in the context for each board. Attention should also be given to the types of knowledge transformations that can take place and opportunities developed for the various types of transformations and transfers that enhance the knowledge base of the board. This will include opportunities for reflection, mentorship, job shadowing, and inservice.

Finally, administrators should recognize that their professional knowledge is only one of the types of knowledge that is of value in school system governance. Board members bring technical expertise, as well as, knowledge of the external environment. It is the task of the administrator to encourage board members to correctly identify their knowledge and to engage them in expanding their knowledge of both the external and internal environment.

Implications for Further Research

The results of the study suggested a number of other phenomena that should be studied. The following are research topics that may help to further understand the areas of governance and knowledge management.

1. Research needs to be done to establish the nature of knowledge transformations as they occur. Retrospective analysis does not allow the researcher to see the transformations as they happen. It still requires that reflective practice take place to examine the meaning of incidents, but retrospective analysis means that you have to

make some inferences about the transformations that took place. For example, one can assume that because a statement is made, it will be combined with the knowledge of others, but it would be useful to observe knowledge transformations first hand and make sense of it afterward.

2. Research of ongoing critical decisions is required to explore how interpretation schemes are used to determine the acceptability of knowledge structures. In retrospective studies, there is not a clear picture generated of the knowledge that is rejected or unacceptable, because the retrospective has a bias toward knowledge that has become shared, and therefore, acceptable.
3. Research into relevant measures of school board effectiveness is required to determine what, in fact, constitutes effective practice and how effectiveness might be measured.
4. Research is required to examine board/management interdependence versus independence and the influence of these two types of relationships on board effectiveness.
5. Research is needed to explore knowledge management in other types of boards (non-profit, corporate) and in other types of groups (i.e., school staff groups).
6. It would be useful to compare and contrast knowledge management in effective versus ineffective groups.

Summary

The diversity of roles and relationships that existed in each of the governance teams suggested that an integrated approach to roles rather than a differentiated approach might be successful in these groups. It may be that there are several configurations of effectiveness indicators that would be compatible depending on board culture, group values, and other contextual elements.

An examination of knowledge management requires that an accounting of the manner in which these four elements interact with each other take place. Knowledge

management must take into account not only cognitive elements, but also the values and interpretation schemes that are instrumental in integrating knowledge structures into the collective, the social interaction patterns that are the primary mechanism for knowledge transfer, and roles and relationships that determine how new knowledge is generated and distributed.

New board member induction often focuses on training around board processes and protocol. If there are many different effective board configurations that are context dependent, it would be beneficial for board member induction to focus on enculturation or orientation to the context of the board. Less emphasis should be placed on global definitions of roles and processes and more placed on replicating how things were done successfully in the past in the specific context of the group. This means induction and training should focus on replicating the existing culture, induction into the social life of the board, communication patterns, values and norms, organizational stories, and all elements of the sharing of cognitions.

In this study, collective values were developed and group members were part of building the collective narratives and interpretation schemes that were used in negotiating critical decisions. Denhardt (1993) stated that administrators' tasks are "not to find quick solutions driven by individual choices; rather, it is the creation of shared interests and shared responsibility" (pp. viii-ix). Knowledge management is a process of lived experience situated within a cultural, cognitive, social, axiological, and political milieu. In this study, knowledge management was an educative process that developed shared understandings of the issues facing the groups.

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