

Leadership for Knowledge Communities

by

Professor Larry Sackney
Larry.Sackney@Usask.ca

&

Professor Keith Walker
Keith.Walker@Usask.ca

University of Saskatchewan
28 Campus Drive
Saskatoon, Saskatchewan
CANADA S7N 0W0

Much has been written about the need for both schools and leadership to be different from what they are today if we are to meet the challenges of a knowledge society. The impact of globalization, new technologies, and the need for a well-educated society has put pressure on educators to improve opportunities for student learning. Various restructuring attempts have met with minimal success. The traditional worldview of schooling, based on a mechanistic model, has not been able to meet the needs for this transformation. Instead, we need an ecological view of the natural, social, and educator orders; a turn toward community; the social aspects of learning; a concern for professional learning; an understanding of social innovation, self-organization and complexity; sustainable innovation; social networks; and an awareness of learning in the face of mystery—each holds the promise of creating a better understanding of what works and what should be given attention in schools in the 21st century.

For many years, we have been disturbed by the focus in school systems on production, activity, and achievement rather than on learning. This has been especially evident with the advent of high stakes testing, which has permeated the educational landscape. Our contention is that this environment does not result in sustainable and improved student achievement. We, along with others, have advocated a turn toward learning community theory based on ecological and complexity perspectives.

In this paper, we explore some of these notions with reference to the development of learning community models and leadership. During the past four years, we have been studying school learning communities and how these schools get their work done, how they transfer knowledge, how they evolve, the nature of leadership, and how communities of practice have been sustained. We begin the paper by advocating a paradigm shift from the dominant mechanistic worldview to ecological and complexity perspectives. We then describe the concepts of learning communities and communities of practice as a prelude to our understanding of sustainability and capacity building. In the second section of this paper we describe the leadership findings that resulted from our research studies.

The Paradigm Shift

Our views of the needed paradigm shift have been especially influenced by the writings of Capra (2002, 1996) and Bohm (1980, 1985). The new concepts in physics have brought about a profound change in how we view current theories of matter; from the mechanistic worldview of Descartes and Newton to a holistic, ecological, and complex view of school organizations.

Ecological Perspectives on School Organizations

Webster's dictionary defines ecology as "a branch of science concerned with the interrelationship of organisms and their environments, especially manifested by natural cycles and rhythms, community development and structure, interaction between different kinds of organisms, geographic distributions, and population alterations." Under this definition ecology refers to the totality of patterns, connections, relationships, interactions, and mutual influences that emerge among people and the forces that impinge on them. Capra (2002) saw this as an elemental process of all living systems, including education.

The new paradigm based on an ecological worldview, sees the world and organizations as an integrated whole rather than dissociated collection of parts (Capra, 1996). According to Capra, ecological awareness "recognizes the fundamental interdependence of phenomena and the fact that, as individuals and societies, we are all embedded in (and ultimately dependent on) the cyclical processes of nature" (p. 6). From an ecological perspective, the world is not a collection of isolated objects, but is a network of phenomena that are fundamentally interconnected and interdependent.

This shift in perceptions and ways of thinking is not easy. It requires an expansion not only of our perceptions and ways of thinking, but also of our values. In our Western culture we have overemphasized self-assertion as opposed to integration values. While neither is inherently good or bad, what we need is a dynamic balance. Capra argued for a paradigm shift that includes a shift in social organizations as hierarchies to that of networks (p. 10).

The ecological perspective has become called "systemic" and the way of thinking implies "systems thinking." We use ecological and systems thinking interchangeably. Systems thinking or ecological thinking views organizations as connections, relationships, and contexts. These living systems, "are properties of the whole, which none of the parts have" (p. 29). Our world is not a world of distinct parts and separate events but, instead, a world of connections, interrelationships, interdependencies, systems, and mutual influences. It is a world, according to Capra, that emerges naturally as living beings respond meaningfully to environmental shifts that have caught their attention. It is a world, according to Bohm (1980), that must be viewed holistically because what appears to be separate and distinct at one level becomes unified at another level.

The scientific view during the 18th, 19th, and most of the 20th century was the world as a clockwork model; the decisive changes came during the past three decades when scientists recognized that nature is "relentlessly nonlinear." Capra (1996) stated,

“The exploration of nonlinear systems over the past decades has had a profound impact on science as a whole, as it has forced us to reevaluate some very basic notions about the relationships between a mathematical model and the phenomena it describes. One of those notions concerns our understanding of simplicity and complexity” (p. 123).

In the nonlinear world—which includes most of the real world—chaotic behaviour can give rise to ordered structures. The behaviour of chaotic systems is not random but shows a deeper level of pattern order (p. 123). For the scientific world the notion of chaos has resulted in the indeterminacy of particles at a given moment. Both Capra and Bohm have linked ecological systems to complexity theory.

Complexity Perspectives on School Organizations

The study of organizational complexity is not a new pursuit. Etzioni (1961) used the construct of compliance to show how different compliance structures demonstrate differing organizational variables: goals, power, interactions, decision making, communications, socialization, recruitment, distribution patterns, cohesion, leadership, and relationships with participants (p. xv). It is our view that complexity theory and its analogies provide a helpful lens through which to make sense of schools (Wheatley, 1992; Oshry, 1996).

In his book, *Managing the Unknowable: Strategic Boundaries between Order and Chaos in Organizations*, Stacey (1992) challenged the mainstream values entailed in developing strategic directions which allege to share success through “stability, harmony, predictability, discipline, and consensus [stable equilibrium]” (p. xi). Alternatively, he argued for strategic directions for organizations through *bounded instability*, creativity, emergent development, healthy tension and multiple perspectives.

Stacey shunned the use of control and the “illusory goal of stable equilibrium” (p. 8), especially in the context of unknowable futures. He reminded his readers of the decline of organizations that restrict their energies to initiation, repetition, to *stick to the knitting* orientations for the sake of safe-keeping and stability. Like Crabb (2004), Stacey repeated the message of system analysts who point to the linearity fallacy which mistakenly ignores the complexity, distance and indeterminacy of cause and effect links (Stacey, 1992, p. 11). Nonlinear feedback systems allow major outcomes to proceed from incidental and disproportionately small causes. The movement from chaos to order, instability to stability, without cause-and-effect links that can be controlled but where order emerges from processes of self-organization, are the order of the day. Stacey believes that organizational leaders are helplessly preoccupied with predictability and that they do not sufficiently account for unstable dynamics. Likewise, Streatfield (2001) contested the myth of simplistic control with his thesis that “the essential function of managers cannot be simply to control the paradoxical movement of continuity and transformation, of the known-unknown, because it is impossible for any participant to be in control [M]anagers are simultaneously ‘in control’ and ‘not in control’” (pp. 130-131).

Management and leadership, as “being in control” is “simply one pole in the paradoxical experience” (Streatfield, p. 132). Lipman-Blumen (1996) claimed that it is the leader’s role to “bring meaning and coherence to the confusion of life. The best leaders teach us increasingly complex layers of meaning that help us to integrate the twin

dialectics, individual and societal, between self and other” (p. 333). She argued that “connective leaders can help us to integrate the societal dialectic between diversity and interdependence” by interpreting and resolving those parallel tensions (p. 338).

Stacey contended that to equate excellence and stability is problematic and that the purported causes of instability (incompetence and ignorance) are overly simplistic. He stated,

Scientists have called this combination of specific unpredictability and qualitative pattern chaos, fractal or strange. Only when a system operates in this chaotic, fractal, far-from-equilibrium state is it continually creative in the sense that as its behavior is automatically fed back into the rule that generates it, different outcomes are always produced. Equilibrium states are ones of predictable repetition that by definition exclude continuing creativity, while chaos is a state of endless variety that is creativity. The tension generated by being pulled in contradictory directions, the paradox of control and freedom leads to such bounded instability and creativity. (Stacey, 1992, p. 55)

Stacey, Griffin, and Shaw (2000) have written about the dynamic interplay of stability and change, continuity and novelty, and decay and generation (p. 12), and have outlined five *causal frameworks* which explain and distinguish various teleologies (the final cause phenomenon): secular natural law teleology, rationalist teleology, formative teleology, transformative teleology, and adaptationist teleology. They provide these distinctives to counteract the “reductionist, mechanistic thinking and present a more holistic perspective in which the whole is more than the sum of the parts, with both the whole and the parts following iterative, non-linear laws living system . . .” (p. 17).

According to natural law teleology, the movement is toward the perfect, hidden order through timeless universal laws that seek to align by conformity (Stacey, Griffin, & Shaw, 2000, pp. 26, 49). In rationalist teleology (Kantian orientation), the change is a consequence of human choice to realize reasoned goals with ethical universals designed by autonomous humans and their operationalized motivations (pp. 26, 49). In the formative teleology, there is some unfolding self-organization towards a stage-wise sense of the preferred final state, based on rules and principles (pp. 26, 49). In transformative teleology, there is a perpetual, spontaneous and paradoxical self-organization consisting of both continuity and radical transformation towards the novel and its iterative variations (pp. 49, 52). And in the adaptationist teleology, there is the struggle of “chance-based competitive search for optimality” with weak self-organization moving gradually from a stable to an environmental adaptive state (pp. 49-54).

These teleologies become ways to understand and distinguish causal frameworks. Stacey, Griffin and Shaw (2000) characterized systems theories as holding “that the internal dynamics of a system, the form of the system, play a major role in determining its behavior” (p. 66). For these authors, an “organization is a process of joint action in which patterns in that action are both repeated to preserve continuity and stability and at the same time opened up to create the possibility of transformation, the truly novel” (p. 83). They were concerned that some strains of systems thinking tend to objectify human interaction as a system to

the exclusion of human freedom. They were interested in knowing how people get their work done in spite of boundaries, constraints, and coping with the unknown. Stacey et al. argued that “humans can identify leverage points and stay in control”; whereas chaos theory models suggest that “long-term cannot be predicted, making it impossible for humans to stay in control” (p. 91). They summarize the view that “chaos theory shows how particular control parameters, determined outside the system, cause its behavior to move toward a particular state space called an attractor [global patterns of behavior displayed by a system]” (pp. 86-87).

Based on the above perspectives, we turn our attention to schools as learning communities and places of communities of practice. These perspectives, it has been argued, are compatible with learning community theory and practice (Mitchell & Sackney, 2000; Walker & Sackney, in press).

Schools as Learning Communities

During the past number of year’s considerable research on learning community characteristics have identified some commonly occurring characteristics. The first characteristic is that learning communities have *shared vision, values, and goals* (DuFour, 1996; Huffman & Hipp, 2003; Mitchell & Sackney, 2000). This condition provides direction and alignment for educational activity because it contains a compelling image of the type of learning environment desired by the people in the school. The vision must be embedded in the hearts and minds of people throughout the school, and this vision has to be shared and understood by all in the learning community.

A second characteristic is that learning communities have a *collaborative work culture* (Huffman & Hipp, 2003; Harris, 2002; Sackney et al., 2005). In this type of culture, educators not only learn from one another, but they also enable the development of “socially distributed knowledge, whereby individual knowledge bases become part of the collective discourse and expand the professional capacity of the entire team” (Mitchell & Sackney, 2000, p. 60).

The *collaborative culture* leads to a third characteristic and that is that learning communities are places where collective learning and shared understanding exist (DuFour & Eaker, 1996; Sackney et al., 2005). This type of environment builds a community of practice (Wenger, 1998) where mutual obligations become the basis of continued learning.

The generation of shared understandings and collective learning depends on a fourth characteristic: a focus on *reflective practice and experimentation* (DuFour & Eaker, 1996; Harris, 2002; Sackney et al., 2005). The development of a learning community invites educators to constantly examine their practices, to seek out and experiment with new methods, and to reflect on the outcomes of the experimentation. Consequently, in such cultures one finds numerous action research projects that result in a climate of ongoing renewal and improvement.

The presence of *knowledge systems and data-based decision making* is a fifth characteristic (Conzemious & O’Neill, 2001; DuFour & Eaker, 1996; Sackney

et al., 2005). In learning community schools, data are collected on a wide array of measures and converted into meaningful information so that teaching and learning can be improved. Without data, improvement is virtually impossible.

A sixth characteristic is that learning communities are also *communities of leaders* (Sackney & Mitchell, 2005; Speck, 1999). Such a configuration ensures that there is collective learning and a shared construction of meaning. Within a community of leaders, many people share the tasks that shape school direction, construct meaningful knowledge, and model appropriate values and action.

Finally, in order for any learning community to survive and flourish, a culture of high *trust* has to exist. If we are to bring profound improvement to a school, trust is a critical factor. As Mitchell and Sackney (2000) state, “Without trust, people divert their energy into self-protection and away from learning. Where trust is lacking, people will not take the risks necessary to move the school forward” (p. 49). Rosenholtz (1989), Hopkins (2001), and Stoll and Fink (1996) concluded that dysfunctional school cultures prevent school improvement from occurring.

In summary, schools that operate as learning communities have a different culture and different teaching and learning conditions than do traditional schools. As Sergiovanni (2005) stated, “Learning communities have faith in the *craft knowledge* and wisdom of those closest to the classroom. They are on constant lookout for new learning opportunities as ways to *expand* what they know and can do. They believe in collaboration and view learning as a *professional obligation*” (p. 31, emphasis in the original). In conclusion, learning communities have developed the capacity for learning to occur and this belief is engrained in everyone who comes in contact with the school.

Communities of Practice in Schools

The collaborative culture of learning communities build environments of professional and community practice. Wenger, McDermott, and Snyder (2002) said that “communities of practice are groups of people who share a concern, a set of problems, a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4). They asserted that “over time they develop a unique perspective on their topic as well as a body of common knowledge, practices and approaches” (p. 5). Wenger et al. indicated that “It is not communities of practice themselves that are new, but the need for organizations to become more intentional and systematic about managing knowledge and give this age-old structure a new central role in the business” (p. 6).

Through the attention to the importance of social theory of learning, Wenger (1998) and Wenger et al. (2002) viewed learning as both individual and social. Communities of practice were viewed as being natural in organizations, and, if fostered and cared for, they become building blocks where knowledge is gathered, enriched, and discovered. Communities of practice provide high levels of added value to the organization because they become areas of continuous stewardship and application of knowledge.

According to Wenger (1998), a social theory of learning must integrate the components necessary to characterize social participation as a process in learning

and knowing: *Meaning* (our ability to experience our life and the world as meaningful); *practice* (the shared historical and social resources and perspectives that can sustain mutual engagement); *community* (the social configuration in which our enterprises action are defined as worth pursuing and our participation is recognized as competence); *identity* (how learning changes who we are and creates personal histories in the context of our communities). Consistent with the ecological and complexity perspectives, communities of practice provide learning spaces for participation among individuals, communities, and organizations. Wenger's interpretations of social theories of learning are based on four axes of influence:

1. The axis of *social structure and situated experience* (which reflects tension between the institutional and every day practice);
2. The axis of *practice and identity* (which reflects tension between social, every day activities and individual markers of membership);
3. The axis of *collectivity and subjectivity* (which reflects tension between what tends to be global and what tends to be the experience of subjectivity); and
4. The axis of *power and meaning* (which reflects tension between collective search for meaning and individual search for meaning).

Wenger contended that the design of a school's learning architecture should generate a combination of engagement (wherein physical and virtual spaces, joint tasks, availability for help, boundary and various degree encounters, initiative, accountability and tools); imagination (which provides orientation, meaning, reflection, representations, patterns, comparisons, exploration, play and simulations); and alignment (which is expressed as convergence, common focus, cause, interest, coordination, methods, boundaries, jurisdiction, policies, processes and conflict resolution).

In conclusion, school leaders need to give attention to and foster participation in dynamic social learning that is characterized by engagement, imagination, and alignment to the shared purposes of the learning community.

Concepts and Disciplines of Community

In thinking about building schools as communities, Sergiovanni (1996) has used Tonnies (1957) concepts of *gemeinschaft* and *gesellschaft*. According to Sergiovanni, Tonnies argued that as society moves toward the *gesellschaft* state, community values are replaced by contractual relationships. In *gesellschaft*, rational will is the motivating force. Individuals decide to relate to each other because they see some goal or benefit from the relationship, the emphasis is on the "I". In *gemeinschaft*, natural will is the motivating force. Individuals relate to each other because of intrinsic meaning and significance. The focus is on the "we." Our contention is that if we are to build schools as learning communities, then we need to foster more *gemeinschaft* notions, because trust is much more likely to exist in *gemeinschaft* organizations (Walker, Shakotko, & Pullman, 1998). *Gesellschaft*

may offer efficiencies and scientific amenability, but not community. School communities need to be seen as fragile ecosystems, comprised of a complex network of relationships, bound in purpose toward learning – at individual and social levels – in ways that last, improve and result in high quality outcomes for all. *Gemeinschaft* communities are much more aligned to the eco-system features that we believe are features of exemplary schools.

Sustainability and Capacity Building

Over the last decade, the literature has moved beyond Senge's (1990) five disciplines to notions of sustainability, capacity building, discourse, and social networking as key elements of a learning community. We use a modified definition of sustainability provided by Fullan (2005) and Hargreaves and Fink (2005). Fullan defined sustainability as "the capacity of a system to engage in the complexities of continuous improvement consistent with deep values of human purpose" (p. ix). Hargreaves and Fink, on the other hand, defined sustainability as "leadership and improvement [that] preserves and develops deep learning for all that spreads and lasts, in ways that do no harm to and indeed create positive benefit for others around us, now and in the future" (p. 17). For these authors, sustainability means more than whether something lasts. It also implies "how particular initiatives can be developed without compromising the development of other initiatives in the surrounding environment," (p. 17) and the idea of sustainability is inherently moral. But, for us, it also implies that when an initiative is implemented, the targeted members continually learn from their experiences, and they continue to develop capacity in what they are attempting to change. In our earlier work (Sackney, Walker, & Hajnal, 1999, Hajnal, Walker & Sackney, 1998), we called this institutionalization and routinization (words which betray the limitations of our former mechanistic perspectives and biases).

Capacity building involves developing individual and collective ability such that disposition, skills, knowledge, motivation, and resources are available for future change and action. Where there is limited or no capacity, it is difficult to bring about any change. When professional staff in schools have had positive experience with change, they are more likely to engage in future change (Fullan, 2005). Where the disposition, skills, knowledge, motivation, and resources are lacking, capacity for change is limited.

Schools operating under mechanistic or clockwork assumptions are not organized to foster learning, but rather to cultivate compliance (see Etzioni, 1963). The bell and timetable are two powerful organizing mechanisms, as are curriculum guides and examinations. In these typified environments, teachers teach and students are expected to master the content and then regurgitate the information on an examination. We call this the transmissional mode of instruction. Unfortunately, the traditional approach is not suitable nor sustainable for the knowledge society. Hargreaves (2003) argued, "instead of fostering creativity and ingenuity, more and more school systems have become obsessed with imposing and micromanaging curricular uniformity" (p. 1). He contended that in a knowledge society deep cognition, ingenuity and invention, and creativity and responsiveness are the gold standard.

The transmissional mode operates from the assumptions of a deficit capacity model (“half empty” way of viewing the world). According to this approach, if a student can’t learn then he/she needs to be fixed. The capacity building model (“half full” way of viewing the world), by contrast, takes a more sustainable view of teaching and learning. It assumes that learning differences are not deficits but are actually different pathways to learning and that different learning strategies may be required. Earlier, Scheffler (1990) hoped to release us from the bonds of the myths of fixed, harmonious, and valuable potentials. His concern was that embracing these myths reduced the work of facilitating learning to imputing narrow trajectories on all human potential and trivializing people by making realization of potential merely a technological and efficiency question. The notions of complexity and ecology tell us that these old “quick fix” perspectives are unworthy and misleading approaches to our educational efforts.

Arguing against the fixed potentiality view, Scheffler claimed that “both what people are and what they in fact turn out to be are contingent, to a calculable extent, on human intention, both individual and social, bounded only by available resources and the limits of ingenuity”(p. 11). We know that similar inputs do not result in similar outcomes. Instead, we need to find social mechanisms to make educational policies and implement practices that at once provide liberty to all but do not disadvantage the least capable (those who are lower achievers). Scheffler argued that the myth of *uniformly valuable potential* stipulates both positive and negative potential valiances (incompatible and negative potential). It is not true that everyone will make equal contributions to learning communities (or eventually to society as a whole). Indeed, the educational ecosystem hosts diverse, complex, and dynamic entities.

Communicative Interactions

The ecological perspective view stipulates that educational systems are not merely naturally occurring phenomena but are constructed by human beings. The complexity perspective adds that the constructions of human beings are not predictable and that external forces jointly work with humans to cause situated constructions. What this implies is that educational systems are personally and collectively constructed reality, from which other realities are possible but not necessarily predictable. As such, constructivist learning theory positions knowledge as emerging from a dynamic interplay between personal and interpersonal sense-making processes. Knowledge construction occurs within a network of collective understandings and culturally derived limits. Constructed knowledge connects back to the learners’ real world, it is meaningful within their culture and experience, and is different for every learner.

Constructing educational learning systems from an ecological perspective requires careful and persistent attention to the “processes and patterns of organization of living systems” (Stacey, 2001, p. xvii). Stacey claimed that meaning emerges from local communicative processes, along with freedom of human choice and intention within “the conflicting constraints of power relations. Knowing is, therefore, the process of communicative interaction” (p. 163). He reiterated the transformative teleological position that “making sense of

organizational life requires attending to the ordinary, everyday communicative interacting between people at their own local level of interaction . . . because it is in this process that the future is being perpetually constructed as identity and difference” (p. 163). Streatfield (2001) said that through communicative interaction “members of an organization are perpetually creating its future . . .[by] creating the movement of an organization . . . as patterns of interconnected actions characterized by continuity and transformation . . .[and thereby] reproduce the identity of their organization” (p. 130). Bhaktin (as cited in Stacey et al., 2000) argued that

all social phenomena are constructed in the ongoing dialogical relationships between people. He stressed the multiplicity of discourse, symbolizing practices and speech genres that are to be found in any culture. Language is simultaneously structuring and being structured by people so that individuals are not simply the effects of social relations, nor are social relations simply the sum of individuals. He stressed the unpredictable and unfinished nature of dialogue and its capacity to produce the novel. (p. 174)

Communicative interactions are necessary for organizational learning (or what we call learning communities) to occur. Koffman and Senge (1993) described learning organizations as "spaces for generative conversations and concerted action, where people can talk from their hearts and connect with one another in the spirit of dialogue . . . [to create] a field of alignment that produces tremendous power to invent new realities . . . and to bring about these new realities in action" (p. 16). For learning to occur, they contend that learning organizations must be grounded in three foundations: a culture based on transcendent human values; a set of practices for generative conversation and coordinated action; and a capacity to see work and life intertwined (p. 11). Kim (1993) characterized organizational learning as "dependent on individuals improving their mental models" (p. 44). In other words, we must make explicit our views of the world and work, and, in turn, understand others views. Individual frameworks become embedded in the world view of the organization (Hajnal et al., 1998). In order to sustain and encourage learning, the leaders need to be learners themselves (Argyris, 1993). Leaders can influence the restructuring by modeling the desired learning behaviours and by valuing the search for new ideas. In a similar vein, Sergiovanni (1996) argued for leadership as pedagogy. "When leadership as pedagogy is practiced, principals . . . exercise their stewardship responsibilities by committing themselves to building, serving, caring for, and protecting the school and its purposes" (p. xvi). Leadership as pedagogy calls the school staff to a higher level of commitment, effort, and quality.

In creating quality communities of interaction, Senge (1995) argued that learning communities must provide spaces for generative conversations and concerted action. In them, language functions as a device for connection, invention, and coordination. In communities, people talk from their hearts and connect with

one another in the spirit of dialogue. When people talk and listen to each other they create a field of alignment that produces synergy to invent new realities and put them into action. The synergy comes from the quality of relationships that result from the dialogue.

Isaac (1999, p. 69) said there are four fragmented pathologies that create barriers to individual and social relations: abstraction, idolatry, certainty, and violence. He suggested that “paying attention to the details of our experiences” (p. 56) will help us to displace abstraction. Idolatry, which he understands to be the problem of false or distorted memory, may be helped by appreciating the unfolding patterns of reality (emerging from implicate order) and seeing potential (p. 63). Isaac believes that certainty keeps us bound from reflecting and impairs our awareness of gaps and making adjustments to the status quo. Finally, he cited the violent tendency people have to be defensive and the propensity to impose our ways and thinking on others with undue force. Instead, we need to understand the principle of coherence (i.e., “we learn that things fit together in ways we could not have understood or imagined,” p. 69). Dialogue, for Isaac, is “the profound capacity to listen” (p. 83), to honour and respect the legitimacy of others (pp. 110, 111), to “suspend our opinion and the certainty that lies behind it (p. 134), and expressing our authentic voice to transform circumstances (pp. 159-160).

In learning communities and communities of practice, there are pathologies and structures that can and do hinder our actions and conversations from the ideals of reflective and generative dialogue (Isaac, p. 261). Isaac called the leaders of dialogue “convenors” because they help create the space for exchanges, facilitate conversations and work to sponsor the positive aspects of individual and collective “inner ecologies” (p. 301). This is accomplished by cultivating organizational and system dialogue through democratic and energy producing networks. Cross and Parker (2004), in describing their work with analysis of social networks, concluded that “energy lives in a sweet spot in five dimensions of conversations or group problem-solving sessions: a compelling goal, the possibility of contributing, a strong sense of engagement, the perception of progress, and the belief that the idea can succeed” (pp. 57-58). These authors, and others, believe that relational capital is key to individual and organizational performance and that the role of the leader is crucial to these community dynamics (Albrecht, 2006; Starratt, 2003; Arnett & Arneson, 1999; Drath, 2001).

In this section we have distinguished between *gemeinschaft* and *gesellschaft* expressions of schools as communities. We argued that school community members will enhance the quality of their lives and learning together by being mindful of sustainability factors, capacity building initiatives, and healthy patterns of communication.

What We Have Seen in Exemplary Schools

In the sections to follow, we review some of our research findings from the last number of years to provide some empirical insights to the conceptual and perspectivist notions conveyed in the first section of this paper.

Early Insights from Our Research

In earlier studies (Sackney et al., 1998; Hajnal et al., 1999), we sought to see whether school improvement initiatives could be institutionalized and, if so, how? The basic idea was that if we could better understand the conditions under which school improvement initiatives become institutionalized there would be obvious benefits for students, professionals, communities, and taxpayers. As our study progressed, we became more and more interested in the extent and manner in which schools involved in a restructuring initiative exhibited elements of the learning community. This then led us to see schools in more organic, holistic, and complex ways.

Seven elements of pedagogical effectiveness stood out in all phases of our research, particularly at the classroom level:

1. High expectations were held by students, parents, community and professionals for student academic performance and social behaviour;
2. Productive learning environments were sought in all expressions of effective learning communities;
3. A wide variety of teaching and learning strategies were used by teachers to motivate and foster communication of ideas and processes;
4. Clear (talked about) teaching and learning goals were agreed to by students, parents and teachers, for individuals, for classrooms of students and teachers, and for school-level activities;
5. Student progress was monitored, fed-back, and appropriate educational design decisions were made, based on the data;
6. Curriculum requirements, teaching and learning activities, and testing were aligned with each other; and
7. There was a focus on academics at every turn in the life of the school.

School development was another element that emerged from our studies. While others might call this organizational learning or community-building, we were able to identify a number of indicators or elements that were common to schools that were successful in institutionalizing school improvement initiatives. The nine key elements appeared to be interconnected and expressed in many different forms of school life:

1. Caring climate;
2. Shared vision and common superordinate values held by students, parents and school staff;
3. Strong collaborative culture;
4. Systematic planning and evaluation of school activities and improvement initiatives;
5. Constructive problem-solving;
6. Dialogue amongst parents, teachers and students with respect to quality pedagogy;
7. Positive relations with those beyond the immediate school setting;
8. Shared decision-making, where results of decisions would pertain; and

9. Effective interpersonal communications, including a culture of working through difficulties and conflicts.

Our research also pointed to a component that we have called “Ecological Mastery.” These were attitudes and thinking processes displayed in common by effective school communities:

1. Willing and creative learners; people who were constantly looking for or making opportunities for developing their personal and professional competence;
2. People who led by doing; not just saying;
3. Disposition among professional staff, but also including parents and students, that the work of the school was a team effort and that each person had roles essential to the collective success;
4. Disciplined attention to purpose and goals;
5. Demonstrated respect for persons, a transparency (what you see is what you get), and an attitude that accepted people despite differences; and
6. Meaningful and timely support in terms of resources and/or encouragement seemed to be always available for those taking initiatives that would ultimately support the common good.

Symbiotic relationships also characterized effective schools. Generative relationships amongst people were common to all the effective schools where we saw learning communities existing. If, symbiosis has to do with the “habitual living together of organisms of different species [and] usually refers to the relationship benefiting at least one participant and harming none,” then we think this notion offers a metaphor for learning communities. The qualities that characterized symbiotic relationships in the learning communities that were linked and interconnected to the three other components in this framework (pedagogical effectiveness, school development, ecological mastery) seemed to be central to or essential to the life-blood of the community

Trust provided the synergy by which pedagogical effectiveness, school development, and ecological mastery converged. Without trust, the other elements are not possible. It seemed to be prized and was considered crucial to the generative efforts of building community. Where trust was high, people served others, as co-owners, in ways that mattered and that were sensitive to the larger goals. In Etzioni’s (1996) terms, we saw voluntary order and bounded autonomy in action.

Formal and informal leadership in the school tended to provide moral purposes. These purposes included: education of children and providing for their best interests, but also made room for schools to be sacred, safe places for imperfect people. In learning community schools we saw evidence of the school as an authentic and accepting community. Palmer (1998) reminded us that not only are communities “outward and visible signs of inward and invisible grace” but they are “spaces in which the community of truth is practiced” (p. 90). Carter (1998, p. 280) argued that “civility requires a commitment to live a common moral life” in the

context of community norms. As a result, “we must come into the presence of our fellow human beings with a sense of awe and gratitude” (p. 281). Learning communities can provide the moral purpose, and encourage members to build their own capacities by showing the same civility and purpose in other systems.

Learning communities also serve as places for synchronicity. Following Jung (1969), Jaworski (1998), and Senge (1990, 1995) each learning community we observed experienced an “acausal connecting principle” –a “peculiar principle active in the world so that things happen together somehow and behave as if they were the same, and yet for us they are not” (Jung, p. vii). Perhaps this is another way of saying that schools are complex and require that we use ecological ways of understanding the phenomena of learning.

We view the elements of pedagogical effectiveness, school development, and ecological mastery as interconnected. Each of the indicators of pedagogical effectiveness is synergistically tied to other qualities of pedagogical effectiveness. These elements build upon or erode each other. The same could be said for the elements of ecological mastery and school development components. As these elements connect, there is a synergistic effect that leads to the symbiotic relationships in the schools. Where schools are stuck, we suggest “doing” the right thing ought to be complimented by “being” the right sort of community.

As previously indicated, the learning community is a dynamic place where people collaboratively seek out new information, resolve outstanding and emerging problems, and engage in an active process of knowledge construction and professional development. It also recognizes that organizational learning (a process) and learning community (a metaphor) are closely intertwined.

Our Ongoing Research Findings

During the past four years we have been studying learning communities. We have been particularly interested in the characteristics and models of learning community schools, leadership, and how knowledge management works in such schools. Some 140 schools from two provinces in Canada participated in various phases of the study. We utilized a mixed methodology: surveys, interviews, focus groups, participant observation, and document analyses. From the vast amount of data we have been able to identify some principles and attributes that underlie successful development and effective extension of learning communities (Mitchell & Sackney, in press). In the first part we review some of the principles behind learning community schools and in the second part we describe the attributes of these schools.

Learning community principles. The first principle, *deep respect*, is the foundation of all engagement and for all other principles. Deep respect positions every member in the learning community as a valued participant in the life of the school. This does not mean conflicts and differences never emerge, but dialogue that results protects the dignity and self-respect of the other.

Collective responsibility, the second principle, encourages all staff members to take responsibility for all students in the school. Collective responsibility extends to parents and the community—the orientation is that it takes a whole

village to educate the child. It is the principle that compels individuals to acknowledge their own mistakes, and to learn from the experience.

A third principle is the *appreciation of diversity*. Differences are viewed as the core values of the school. This principle acknowledges the need for diverse teaching styles and avenues of growth, thereby stretching the professional repertoire beyond the usual, habitual, or comfortable practice.

A fourth principle, *problem-solving orientation*, is used to shape engagement. Acting on this principle allows people to remain flexible and to tolerate ambiguity and uncertainty that accompany extensive experimentation and ongoing change. This is the principle that encourages people to ask questions about the nature of their practice and the effects of their practice, and to create a climate of continuous improvement in the classrooms and school-wide.

Finally, the fifth principle is *positive role modeling*. According to this principle, each moment is viewed as a learning moment and it encourages everyone to think about what they are learning at that moment. It also supports the development of distributed leadership, which is necessary to develop a culture of growth and development.

We contend that sustained engagement with an idea is critical for deep change and leadership provides the coordination and coherence for teaching and learning improvement.

When school staffs endorse the learning community theory their beliefs tended to reflect their behaviours. We know that behaviour changes first and beliefs second. In the learning community schools school staffs had made that transition.

Learning community characteristics. A powerful influence on the way people learn in high capacity learning community schools is the *quality of relationships* that exist (Sackney & Mitchell, 2005; Sackney, Walker & Mitchell, 2005). When quality relationships existed among the learning community participants, the members were more connected to the teaching and learning activities. The interactions were of a higher quality, resulting in a systems thinking perspective (Senge, 1990). Students were more socially, emotionally and cognitively engaged in the school (Fredicks, Blumenfeld, & Paris, 2004).

In high capacity learning community schools, the staff developed *shared understanding* by focusing their classroom, hallway, and staffroom conversations on teaching and learning, by sharing instructional strategies, by taking collective responsibility for student learning, by focusing the school vision on student learning, by encouraging innovation, and by taking generative leadership roles aimed at enhancing student learning (Sackney et al., 2005). In these schools, we observed a high level of energy, enthusiasm, and excitement—they felt fortunate to be a part of an exciting educational enterprise.

It was common practice in these schools for teachers to *reflect* on their own practice, to assess the value of educational alternatives, and to discuss professional practice regularly. We observed intentional and systematic reflection about managing knowledge meaning. Many of the teachers engaged in action research and consistently looked for best practice in a given area. Moreover, there was a tendency to use classroom and school-wide data for monitoring progress.

Organizational *resources* were adequate in the high capacity learning community schools, including technological, curricular, library, facility, and human. What was important was that the human resources were configured in such a way as to maximize interaction and that resulted in high identity with the school. Moreover, leadership was practiced in ways that empowered others to take action to improve the teaching and learning function in the school.

Staff in high capacity learning community schools kept *current* on the latest research on teaching and learning. When they encountered problems, they tended to examine what research had to say about that particular issue. Staff were also active learners and “communities of practice” were common (Wenger, 1998). In this way, tacit knowledge was converted into explicit knowledge (Nonaka & Takeuchi, 1996).

There were greater *opportunities for staff, students and parents to learn*. There was explicit attention paid to the intended curriculum, the implemented curriculum, and the attained curriculum (Marzano, 2003). Failed initiatives were seen as learning opportunities and innovation was encouraged and supported. Numerous opportunities were provided for students to learn through after school programs, tutoring, mentoring, and collaborative efforts.

Interactive instruction was a common practice in these schools. When curriculum has relevance for students, they are more likely to be motivated (Watkins, 2005). Teachers in high capacity learning community schools tended to peak students interest and abilities by making links to experiences found in the real world or what we have called “authentic curricula” (Sackney et al., 2005). Teachers created “open spaces for student learning” (Parker, 1998) by utilizing a variety of ways of connecting with students and by making a greater attempt to find out what motivated students to learn. They provided greater flexibility in student projects and encouraged students to take on more learning risks.

Learner engagement was high in these schools. That is, emotional, behavioural and cognitive engagement in these schools was higher compared to low engagement capacity schools (Sackney et al., 2005). In the successful schools, there was close monitoring of student homework, and parents were regularly informed of student progress. We also noted student time on task to be higher in learning community classrooms. Classes started on time and students were monitored in their use of time.

In the high capacity learning community classrooms and schools, students reported a feeling of “*learning flow*” (Csikszentmihalyi, 1997). Participants expressed a sense of accomplishment and a feeling of learning becoming easier and more effective. There appeared to be a sense of community and coherence in the teaching and learning practices in these schools.

In the high capacity learning community classrooms, there was a *shift from a focus on transmission to construction and co-construction* (Watkins, 2005) teaching approaches. In these classrooms more effort was expanded on student sense making and providing students with learning choices. Furthermore, in these classrooms we noted an increased opportunity for student voice and a diminishing of the teacher voice.

These schools and classrooms exhibited *high expectations* for student achievement and behaviour. Caring teachers expected students to do well and they worked with students so that they could experience success. Further, teachers in these schools did not give up on students. Instead, they provided a learning environment that supported student learning success.

Another feature we noted in the high capacity learning classrooms and schools were the *networks of relationships*. Social networks constituted a valuable source for knowledge acquisition (Mitchell & Sackney, 2000). We found that the strength of ties was influenced by the intensity of contact, and reciprocity of influence. Ties were also influenced by the degree of similarity, in relation to demographics, proximity, and affiliation. Strong ties provided safety, predictability, and security. They helped to build an affective environment that yielded belonging and trust. However, strong ties tended to contribute to a conserving trend in schools. By contrast, weak ties provided information that the individual or others in the network of strong ties did not have. We concluded that both types of ties were necessary to enhance the knowledge processes.

Sustainable leadership. From our studies, we concluded that learning communities are characterized by distributed leadership and by strong leadership from the principal. The direct involvement of the principal is central to the successful development of a culture and a set of systems that sustain a community of learners. Without focused and continuous attention from the school principal, we discovered that efforts to build a learning community flounder. By contrast, in schools where the principals stay invested in the process, teaching and learning took center place in the minds of school people (Mitchell, Sackney & Walker, 2004). The principals' involvement, we discovered, unfolds through the performance of four functions: (a) Center, (b) Holder of the Vision, (c) Builder, and (d) Role Model.

The center function places the school principal at the hub of school operations and activities. It requires the principal to know the people in the school and community, to know what is happening in the school on a daily basis, and to know how teaching and learning are progressing for groups and for individuals. While this appears to be an immense task, we found many of these principals were deeply knowledgeable about the people, processes, and progress in their school.

In the high capacity learning community schools the principal's hand was visible in guiding the vision-building process and sustaining a vibrant, viable vision. As one principal put it, "Somebody has to know where this ship is going, and if I don't, who does?" The substance of the school vision was student centered and the school's role was to provide the kind of education that helps all students to be successful.

In most of the learning community schools we observed, the school principals began by building structures that brought staff members together, such as subject and grade teams for planning and decision making, and professional learning teams connected to curriculum and instruction. These structures were used as platforms for building common understandings about educational matters and professional practice. Further, these principals stayed abreast of what was happening in the various networks.

Although we saw many principals talking about learning communities, those who were most successful in creating a learning community were those who served as role models with respect to good teaching strategies, effective collegial processes, respectful treatment of students, and using data as the basis for improvement. The confluence of their words and actions showed staff, students, and parents the types of values, principles, behaviors, dispositions, and discourses that promote good teaching and learning.

Sustainable Leadership for Learning

The notion of deep ecology when applied to educational systems implies an appreciation of dynamic connections, relationships, and mutual influences that impinge on teaching and learning. Ecological and complexity perspectives requires a shift in language so that meaning, patterns, purposes, influences, and relationships become the primary terms and focus of conversations. Educators, for example, might ask the question, “What does this learning experience mean to these learners? How does it connect to their lives?” This type of language values the learner and honors the deep connection between life and learning.

These shifts of perspective radically alter the focus from distinct parts of an educational event or system to thinking about holistic representations. This shift in focus acknowledges that individuals are not islands unto themselves and that people mutually influence one another. These perspectives also acknowledge that shifts in one part of the system cause disturbances in other parts of the system.

These perspectives also imply that shifts in language and focus must be accompanied by fundamental perceptual changes. For educators, it requires a perception of learning as the center of everything. For us, teaching and learning are integrated processes, and it makes no sense to think of one without thinking of the other. We argue that, if learning has not occurred, then teaching has not happened. When teachers and students learn, one senses excitement rather than boredom. In most schools, people work and study in isolation and the focus seems to be production rather than about learning. The ecological and complexity perspectives focus the attention on what the children and teachers are noticing and how they are responding. The required perceptual shift is to recognize that, in spite of all the rhetoric about learning, educators and students do not really see learning as a life process that brings energy and excitement into their lives. Leaders in exemplary schools sustain these kinds of behaviour and mind shifts.

Leadership provides the source of lateral capacity building. By providing the connections and being mindful of communications and relationships with other parts of the system, principals can enhance the knowledge capacity of their school staff. We agree with Heifetz and Linsky (2002) that principals need to be present, simultaneously, on the dance floor and on the balcony and that they must recognize that the solution to improving teaching rests with the teachers. Principals, in our view, must see the school community as a living, chaotic, and complex eco-system (Hock, 1999).

Bateson (1973) had similarly discussed the challenges and dysfunctions of our eco-mental systems when trying to convey understandings, persuade or

influence others to our way of thinking. He said the way that one person “influences another are part of an ecology of ideas in their relationship, and part of the larger ecological system within which the relationship exists”(p. 512). Sheridan and Gutkin (2000) reminded us that school leaders are “part of the ecology within which children, families, and schools function The field is intricately embedded within changing ecologies (realities) that include multiple systems, settings, and populations with which we are concerned”(p. 489). They stated, “we must be reflective of, responsive to, and proactive toward the multiple and changing systems within which we operate”(p. 489).

In “leaderful organizations” “more than one leader can operate at the same time, so leaders willingly and naturally share power with others” (Raelin, 2003, p. 13). Not only is leadership concurrent, it is collective. He suggested that leadership is plural and not solely dependent on one person – “everyone is participating in leadership” (p. 15). In the leaderful organization “everyone counts and every opinion and contribution sincerely matters” (p. 16). Furthermore, Raelin argued that “compassionate leaders [not necessarily positional leaders] recognize that values are intrinsically interconnected with leadership and that there is no higher value than democratic participation . . . the endowment of participation extends to the wider community affected by the actions of an organization”(p. 16). This is the kind of leadership needed to build capacity for a learning community, and which we found in our high capacity learning community schools.

In his discussion of the adaptive work of leadership, Heifetz (1994) said that this work of leading is characterized by its efforts “to diminish the gap between the values people stand for and the reality they face” (p. 22). It is not possible to discern the gaps unless one is fully present with the people. This was an attribute that differentiated high capacity learning community schools from low capacity learning community schools. High capacity school leaders exhibited moral purpose—that purpose was to ensure that all students could learn and that their dignity was protected.

In high capacity learning community schools, the principals used distributed leadership. They were the architects/designers of structures and processes for the success of these schools. They were good at obtaining consensus around the school goals and purposes, and on the desired school culture. They were also good at building trust and quality working relationships. Interestingly, they did not take credit for these accomplishments but rather saw the entire learning community contributing to learning coherence. The intensive focus on student learning provided the coherence around which other school priorities were established.

What does this mean for leaders to be working in the complex eco-systems we call “schools?” They need to focus their energy on teaching and learning and ensuring that there is coherence in what the school is trying to accomplish. One of the first tasks is therefore to build a sense of shared vision and purpose. Another task is to develop the culture that encourages learning at the individual, interpersonal, and organizational levels. Principals and teacher leaders need to be the lead learners and model the way. Schools, as learning communities and communities of practice, need to develop cultures of collaboration and shared responsibility, without reliance on the mechanistic tendencies and pathological

patterns, described in this paper. The development of an interactive, trustworthy, healthy and supportive environment is crucial. Further, an expectation of continuous improvement and ongoing stewardship of learning for every community participant has to prevail. Unless this paradigm shift occurs student learning will be stifled. We have argued that a mindfulness of the promise of ecological perspectives, complexity theories related to change and stability, community development; considerations of the social aspects of learning; a concern for professional learning; an understanding of social innovation and self-organization; attention to sustainable innovation; cognizance of social networks; and an awareness of learning in the face of mystery— will assist leaders to co-create sustainable innovation in exemplary schools.

Conclusion

In this paper we have argued for a paradigm shift, one based on ecological and complexity theory perspectives, if we are to meet the challenges of teaching and learning in the knowledge society and in our school communities. We have also argued for a turn toward learning community and the creation of communities of practice that pay attention to sustainable innovation and learning, that is based in social networks, and an awareness of learning in the face of mystery – as meeting the needs of the 21st century. In addition, we have found that learning community schools can provide the type of learning situations where teaching and learning are sustained at higher levels and sustaining leadership provides the vehicle for school improvement.

In this paper we noted that successful school leaders kept two operating principles in mind: They focused their actions on teaching and learning, and they involved everyone who had a stake in a particular decision or initiative. They helped construct a shared vision, provided spaces for conversations, insisted on a student learning focus, encouraged other to take on leadership roles, encouraged collaboration, and modeled learning for others. In addition, they posed question and facilitated dialogue “that addresses the confounding issues of practice” (Lambert, 1998). In essence, these leaders created environments where interdependency, mutual obligations, and shared commitments revitalized and energized people

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