

ORGANIZATIONAL LEARNING, TEAM LEARNING AND
DIALOGUE AS THE FOUNDATION OF
EDUCATIONAL REFORM

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Organizational Learning,
Team Learning and
Dialogue as the Foundation of Educational Reform

by

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Folio Introduction

Folio Introduction

Within the business literature there has been an explosive interest in the concept of organizational learning over the past decade (Crossan & Guatto, 1996). Many business organizations today, faced with the realities of keeping pace with an ever-changing, dynamic, global marketplace, are looking to learning as a source of change to sustain competitive advantage. Since the educational system is faced with challenges, as is the business community, some educational researchers and writers conclude that the system is failing. Evers (1994) for example states, "even 'good' schools - schools with many students who go on to college and successful careers - are falling further and further behind the realities of a changing world" (p. 490). Maybe the time has come for educational reformers to look to the business literature to see what it has to offer the field of education to support educational reform.

The three papers in this paper folio will review three topics that educational reformers may find useful for educational reform.

Despite the explosive interest in the concept of organizational learning over the past decade a unifying definition of organizational learning remains elusive. Paper one builds on the numerous definitions available to show that organizational learning is a process and a product. The processes of questioning, sharing, organizing, or transferring information and knowledge are deemed influential in creating organizational improvement or transformation, the product of organizational learning.

The existence and acceptance of two types of organizational learning has existed in the literature since Bateson (1972) distinguished between Learning I and Learning II, and Argyris and Schon (1978) distinguished between single-loop and double-loop learning. It is accepted in the literature that single-loop is adaptive learning and double-loop is generative learning. While both are necessary learning functions, generative learning is gaining prominence as the more important learning process for the development of organizations in an ever-changing environment.

This paper presents, from the existing literature on organizational learning, a multi-levelled framework for organizational learning. Building on learning processes at

the individual, team, and organizational level, it concludes that organizational learning is more than just individual learning, and states "relationships, teams, and organizations learn and that this is not the same as the sum of the learning of all the individuals" (Hawkins, 1994, p. 74).

Paper two sets out the importance of teams to the organizational learning process, pointing out that due to the ever-changing global environment, teams play an important role in organizational learning (Handy, 1995; Greenwood, Wasson, & Giles, 1993; Senge, 1990; Swieringa & Wierdsma, 1992). While individual, team, and organizational learning have a role in organizational development, several writers draw particular attention to the importance of teams as learning entities (Dixon, 1993; Senge, 1990; Stata, 1989; Swieringa & Wierdsma, 1992). For example, Senge (1990) states, "unless teams learn, organizations cannot learn", and if teams learn "they become a microcosm for learning throughout the organization" (p. 236). The importance of teams cannot be underestimated. This paper presents dialogue as a mode of communication to enhance team learning and reduce the fragmentation associated with the functional units, departments, or subcultures evident within today's organizations.

The final paper establishes four decades of failed educational reform efforts beginning in the 1960's. Although the reasons for failed reform are numerous, this paper presents three major reasons for failed reform, and suggests that if these three reasons could be addressed and overcome, educational reform would likely prosper. The foundation for overcoming these problems is dialogue. Dialogue is presented as the opportunity to involve all of the stakeholders of change, in an effort to develop a pool of common meaning and action for greater effectiveness. Isaacs (1996) outlines the potential of dialogue with the statement, "dialogue is a unique form of conversation with potential to improve collective inquiry processes, to produce coordinated action among collectives, and to bring about genuine social change" (p. 20).

Paper One
Toward an Understanding of
Organizational Learning

Toward an understanding of
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W. Craig Hayden

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Introduction

Organizational learning has existed in the literature at least since Cangelosi and Dill discussed it in 1965. Lately, its popularity has grown dramatically. For example, Crossan and Guatto (1996, p. 107) illustrate that more articles have been written on organizational learning in the 1990's than were written during all of the 60's, 70's, and 80's combined. Some authors emphasize the importance of organizational learning, going so far as to state that an organization's ability to learn may be the only sustainable competitive advantage (DeGues, 1988; Stata 1989).

This paper is an attempt to provide an overview of the wide variety of definitions of organizational learning, and to analyze organizational learning along two dimensions, namely the types of organizational learning, and the levels of organizational learning.

Definitions of Organizational Learning

Despite the current popularity of organizational learning, authors frequently comment on the degree of fragmentation in the field. There appears to be no consensus on what organizational learning is or how it occurs (Easterby-Smith, 1997; Piol & Lyles, 1985; Garvin, 1994; Huber, 1991; Kim, 1993).

Garvin (1994) provides a brief outline of some of the differences which exist among organizational theorists. "Some, for example, believe that behavioural change is required for learning; others insist that new ways of thinking are enough. Some cite information processing as the mechanism through which learning takes place; others propose shared insights, organizational routines, even memory" (p. 3.65). He goes on to state that, "a clear definition of organizational learning has proved to be elusive over the years" (p. 3.65), and concludes that the exact meaning of organizational learning is difficult to attain.

Despite the wide variety of differences and definitions of organizational learning, common to all is the precept that organizational learning is both a process and a product. The

processes are numerous and varied, and some writers refer to them as inquiring (Argyris & Schon, 1978), growing insights (Simon, 1969), sharing insights (Stata, 1989), questioning (Senge, 1990), creating (Garvin, 1994; Senge, 1990), acquiring knowledge (Garvin, 1994; Thompson, 1995), organizing knowledge (Dodgson, 1993), or transferring knowledge (Garvin, 1994; Kim, 1993). The result of these processes within organizations is a product, organizational change, which also has numerous descriptions such as, outcomes (Simon, 1969), error correction (Argyris & Schon, 1978), behaviour modification (Garvin, 1994; Stata, 1989), adaptation (Dixon, 1993; Dodgson, 1993; Schwandt, 1995), improved efficiency (Dodgson, 1993), modified functions (Harshman & Phillips, 1994), or effective action (Kim, 1993).

Although there has been three decades of discussion on organizational learning, and recognition by Garvin that a clear definition is still elusive, earlier writers have illustrated the process and product focus of organizational learning. Simon (1969) for example, focuses on "growing insights and successful restructuring of organizational problems by individuals", as the processes by which organizations learn. These processes in turn alter the

"structural elements and outcomes" of the organization, with the product being a visible change in terms of an organizational outcome. In his definition, "learning consists of insights on the one hand and structural and other action outcomes on the other" (Fiol & Lyles, 1985, p. 803).

Garvin (1994) emphasizes the process and product orientation as well, noting that organizational change is the product of the organizational learning process. Garvin (1994) defines organizational learning as "... creating, acquiring, and transferring knowledge and modifying its behaviour to reflect new knowledge and insights" (p. 3.65). He believes that new ideas, whether acquired through insight, creativity, insiders, or outsiders, are the building blocks of organizational knowledge and "are essential if learning is to take place" (p. 3.65). In addition to the processes of acquiring and transferring knowledge, Garvin (1994) stipulates the necessity of visible organizational change for organizational learning to have occurred.

Some writers discuss organizational learning in terms of a two-tier learning system. Argyris and Schon (1978) and Harshman and Phillips (1995), in their respective discussions of single and double-loop learning, and adaptive and insight

learning, relate processes to product. They tie the processes of inquiry and discovery to the end result of organizational change and adaptation. Argyris and Schon, for example, state that "organizational learning is the process of detecting and correcting errors" (p.2). They focus on the way organizational members, carrying out the processes of identifying and acting on organizational problems, create a product - a genuine change in behaviour.

Even though many authors state that organizational learning is more than the sum of individual learning, some argue that individual learning is the "link" to organizational learning (Kim, 1993), or that individual learning is the "primary learning entity" in organizations (Dodgson, 1993). While these authors refer more to the need for organizational learning processes at the individual level, they also incorporate these processes with organizational products such as "effective action" (Kim, 1993, p. 43) or "useful outcomes" (Dodgson, 1993. p. 378). Dodgson (1993) offers a broad definition of organizational learning, incorporating both processes and outcomes. Organizational learning is "the way firms build, supplement, and organize knowledge and routines around their activities and within their cultures and adapt

and develop organizational efficiency by improving the use of the broad skills of the workforces" (p. 377). He refers to the need for organizational learning processes at the individual level as a requirement to produce organizational adaptation and improved efficiency. Dodgson states that "essentially, learning can be seen to have occurred when organizations perform in changed and better ways" (p. 378).

Some writers, (Dixon, 1993; Schwandt, 1995; Stata, 1989; Thompson, 1995), in their discussion of organizational learning as the only sustainable competitive advantage for organizations in the 90's, also indicate a correlation between organizational learning processes and visible change. Stata (1989) defines organizational learning as "a process by which individuals gain new knowledge and insights and therefore modify their behaviour and actions" (p. 64). To Stata, organizational learning is a process, but the outcome, or product, is a change in behaviour and actions that increase performance and competitiveness of companies.

Another author stressing the need for organizational learning and subsequent change in a changing business environment is Dixon (1993). In her discussion of the need for organizational learning among organizations of the 1990's,

she also illustrates her belief that adaptation and visible change is the result of organizational learning.

Through learning, organizations adapt to environmental constraints, and avoid the repetition of past mistakes.... Unfortunately, too many organizations ... fail to adapt to customer needs and do not improve their processes to meet rising competitive standards. (Dixon, 1993, p. 1)

Dixon (1993) believes learning and subsequent adaptation to a dynamic economy is necessary for organizations in the 1990's, and organizations flexible enough for this have a competitive advantage. Schwandt (1995) has labelled this flexibility and subsequent competitive advantage "adaptive capacity". He defines organizational learning as "a system of actions, actors, symbols, and processes that enables an organization to transform information into valued knowledge which, in turn, increases its long-run adaptive capacity" (p. 370). He sees organizational learning as the system's ability to adapt to its environment. Organizations that adapt quickly and more effectively to change are organizations that have learned how to anticipate and even embrace change and use it constructively. To Schwandt, these are organizations where

learning is occurring.

Just as Dixon, Schwandt, and Stata discuss organizational learning for adaptation, Thompson (1995) also makes a strong connection between the process of organizational learning and change. In his reference to the world's business environment, he refers to global competition, information technology, and knowledge based economy as environmental conditions that should initiate an organization's continual acquisition of knowledge. He implies that the acquisition of organizational knowledge should be purposeful with the end product being organizational change and organizational success in an ever-changing economy.

The purpose of organizational learning and the acquisition of organizational knowledge is to provide the foundation for rapid, dramatic organizational change; increasingly, the fundamental requirement for organizational success. (Thompson, 1995, p. 85)

Thompson is proposing that in today's world economy, knowledge acquisition is essential. Also, he states clearly his belief that, in order to say organizational learning has occurred, one has to see organizational change; the purpose of organizational learning is to provide the knowledge and skills

to produce rapid change.

Senge (1990) takes the discussion of organizational processes and products a step further. He proposes that the ideal product of organizational learning is a learning organization. He describes the learning process in an organization as "continually expanding its capacity to create its future" (p. 140). Like Senge, Garvin (1994) also discusses creativity and the development of new ideas as important processes to produce a learning organization.

Whatever the source of ideas, these ideas are the trigger for organizational improvement. But they cannot by themselves create a learning organization. Without accompanying changes in the way that work gets done, only the potential for improvement exists. (p. 3.65)

Garvin (1994) believes that although numerous organizations are effective at the processes of creating and acquiring new knowledge, they are unsuccessful at applying this knowledge. This, to Garvin, rules out some of the organizations that consider themselves to be learning organizations, since the processes of learning have not resulted in a learning organization.

Both Senge (1990) and Garvin (1994) present what they

believe are the fundamental processes to produce a learning organization. According to Garvin, "learning organizations are skilled at five main activities: systematic problem-solving, experimentation, learning from past experience, learning from others, and transferring knowledge" (p. 3.66). Senge, on the other hand discusses five disciplines which he sees are the processes that will produce a learning organization. These are mental models, team learning, personal mastery, shared vision, and systems thinking. The development of these five disciplines in any organization, Senge believes, produces a learning organization where "people continually expand their capacity to create the results they truly desire, ... and where people are continually learning how to learn together" (p. 3).

In summary, although an exact meaning of organizational learning is difficult to attain, there appears to be common reference to the process and product of organizational learning. Garvin (1994) concludes that "most scholars view organizational learning as a process that unfolds over time and link it with knowledge acquisition and improved performance" (p. 3.65). Dodgson (1993) appears to support

this by commenting that a major concern of the disciplines of organization theory and psychology is to examine organizational learning, encompassing both processes and outcomes. This process and outcome focus according to Dodgson, enables theorists to describe what learning is, how the outcomes are achieved, and how organizations adapt and develop efficiency.

Despite the variety in terminology, one can still see a common thread in the process and product of organizational learning. Whether the organizational processes involve questions, insights, or knowledge, which are subsequently shared, organized, or transferred, it appears that these and other organizational processes are the foundation for organizational learning. As well, whether the product of organizational learning process is termed outcomes, adaptation, effective action, or a learning organization, it appears that the resulting product of organizational learning is a genuine change in behaviour bringing about organizational adaptation (Schwandt, 1995), organizational improvement (Garvin, 1994), or organizational transformation (Dodgson, 1993).

Types of Learning

Although there are numerous definitions of organizational learning, and much fragmentation in the field (Fiol & Lyles, 1985), there appears to be significant convergence. One area of convergence refers to the hierarchy of learning levels. It appears that organizational learning theorists have accepted Bateson's (1972) and Argyris and Schon's (1978) two-tier system of learning levels as a foundation within the organizational learning literature. Although these learning levels have common characteristics, theorists attach their own label to each level.

Bateson (1972) points out that an organization's ability to remain stable in a changing context denotes a kind of learning, meaning that there are learning episodes which function to preserve a kind of constancy. Argyris and Schon called this single-loop learning. However, there are occasions when problems and conflicts are corrected in ways that require changing the organization's norms, policies and objectives. Argyris and Schon (1978) term this double-loop learning.

Argyris and Schon (1978), state that "organizational learning involves the detection and correction of error"

(p.2). They indicate that both single-loop and double-loop organizational learning involve inquiry. The inquiry associated with error correction of single-loop learning takes the form of "discovering the sources of error" (p.19) and "changing organizational strategies and assumptions within a constant framework of norms for performance" (p.21). Double-loop learning processes, however, encompass awareness of and inquiry into conflicting norms. For Argyris and Schon (1978), double-loop learning involves "a double feedback loop [which] connects the detection of error not only to strategies and assumptions for effective performance but to the very norms which define effective performance" (p. 22).

To support the single and double-loop learning processes, Morgan and Ramirez (1983) compare mechanical and holographic organizational designs. They describe the traditional, mechanical, work design, such as an assembly line, as a place where each member has a narrowly defined place within the whole system, with the objective of "achieving a given purpose in fixed conditions in an efficient manner" (p.4). This is, in essence, single-loop learning where members are not expected to challenge the wisdom of the various rules, processes, and ground assumptions of the organization. However, Morgan and

Ramirez (1983) suggest that it is important for organizations to increase their ability to deal with turbulence in the environment and learn how to manage change in order "to avoid creating problems which would then have to be solved" (p.2). They use a holographic metaphor to suggest an alternate organizational design where "each element of an organization is designed to be able to perform a range of activities which may not all be needed at a single point in time" (p. 4), but are available to be called upon when needed. They believe that the various elements of organizations, designed in accordance with the holographic principle, would be multi-skilled, interchangeable, self-critical, and substantially more rational and effective in the long term, resulting in more responsive and creative organizations. They emphasize that an essential element of the holographic organization is learning, characterized by monitoring and questioning the context and rules in which it is operating, and intelligent action based on a reflective understanding of the nature of the system.

Holographic organizations require that all parts of a system be encouraged to learn, engaging in double-loop learning, which monitors and questions the appropriateness of

what is happening in the system and its context. In other words, the system is designed to encourage the use of intelligence and initiative among its members, rather than merely encouraging them "to know and keep their place" (Morgan & Ramirez, 1983, p. 7).

Fiol and Lyles (1985) in their review of the literature on organizational learning, refer to Argyris and Schon's single and double loop learning, to distinguish between lower and higher level learning based on association building. They conclude that although lower level, single loop learning results in development of associations of behaviour and outcome, these associations are characterized as rudimentary, of short duration, resulting from repetition and routine, and occurring within a given organizational set of rules.

Higher level, double-loop learning, on the other hand, "aims at adjusting overall rules and norms rather than specific activities or behaviours" (Fiol & Lyles, 1985, p. 808). The associations that develop are characterized as long term, resulting from heuristics and insights, and involving more cognitive processes. Consequently, this type of learning leads to the development of frames of reference (Shrivastava & Mitroff, 1982), interpretive schemes (Bartunek, 1984), or new

cognitive frameworks within which to make decisions (Fiol & Lyles, 1985).

Senge (1990), as well, refers to two types of organizational learning, adaptive and generative. Adaptive learning is "survival learning" (p. 14). It is characterized by error detection and correction within a fixed context of organizational parameters and norms. This single-loop, adaptive learning solves a current problem, but the overall culture, structure, functions, norms, and procedures remain stable.

In contrast, generative learning is characterized by questioning underlying structures and enhancing the capacity to create (Argyris & Schon, 1978; Senge, 1990). It implies organizational members challenging the wisdom of rules, procedures, norms, and values and making changes where necessary. Creativity is encouraged and new ways of doing things are advocated. This type of learning includes the ability to understand and manage change, not just to solve problems. It involves the ability to see the organization in new ways, to discover the problems behind the symptoms, and to invent creative solutions. This questioning, discovery, and modification of norms is a higher level, generative process.

Senge (1990), emphasizes that generative learning is best formalized through five disciplines, namely, team learning, personal mastery, shared vision, mental models, and systems thinking. Team learning is the development of the collective capacity for thought and action. Personal mastery is the individual commitment to develop one's own capacity and the capacity of others to create the future. Shared vision is the collective element of personal mastery as individuals come together to develop a sense of common purpose. The discipline of mental models enables individuals to achieve breakthroughs in communication through the surfacing and testing of assumptions. Finally, systems thinking is the ability to understand the cause and effect relationships inherent in the variety of systems in which individuals and groups operate.

Fulmer (1994) gives a clear picture of the two levels of learning when he focuses on short-term and long-term consequences of action. To Fulmer, maintenance learning is when a business tries to discover better ways of doing what it already knows how to do. It is about refining the process and increasing efficiency. It is about doing things the correct way rather than asking if they are the right things to do. Such linear thinking however, offers little challenge to an

organization's existing strategies and operations and it consequently "quite often misses important clues about a changing environment or emerging challenges" (p. 21). This is short-term, single-loop learning. Anticipatory learning, on the other hand, is characterized by participation which allows everyone to explore alternatives and to consider the possible future consequences of actions taken today. Thus, it focuses on the long term and the best way to deal with a future environment.

Lant and Mezias (1996) term routine, incremental learning that enables an organization to remain stable in a changing context, as first-order learning. This type of learning is basically the process of gaining competence in a certain area and "serves to maintain stable relations and sustain existing rules" (p. 270). Thus, in a given environmental change, this conservative learning process consists of "learning how to better implement their chosen strategy while maintaining consistency in other organizational systems" (p. 270). However, Lant and Mezias (1996) correlate second-order learning with the "realization that certain experiences cannot be interpreted within the current belief system, theory-in-use (Argyris & Schon, 1978) or organizational paradigm (Pfeffer,

1981). They characterize second-order learning as exploration and experimentation. According to March (1996), exploration involves experimentation as well as "search variation, risk-taking, play, flexibility, discovery, innovation" (p. 101). Lant and Mezias (1996) believe that this organizational exploration and experimentation can lead to the "recognition of new goals or the means to achieve goals, and the integration of new constructs into existing cognitive structures" (p. 270).

The literature suggests that writers distinguish between two types of learning. The first is routine, incremental, and conservative. Such learning, which maintains consistency and stability within the organizational context, is appropriately summed up by Elliott (1998): "Typically, routine learning may be associated with copying and mastering procedures, efficiently implementing well-tested approaches, or transferring known formulas for success across as many parts of the organization as possible" (p. 9). The second learning type is characterized as a more questioning, inquiring, experimenting and creating process. Elliott (1998) sums up such learning as a conscious collective awareness, assessment, and revision of learning processes.

Levels of Learning

Introduction

Recent attention to organizational learning has posed the question, at what level within an organization does learning occur? Hawkins (1994) in his discussion of the need to revise common organizational learning perceptions, points out that some organizational learning theorists see individuals' learning as the centre of organizational learning, or organizational learning simply as a sum of all the individual learning. Hawkins (1994) contends that organizational learning theorists need to "move away from believing that learning just resides within people, and to become aware that learning is also held between people" (p. 74). He concludes that "relationships, teams, and organizations learn and that this is not the same as the sum of the learning of all the individuals" (p. 74).

In addition to Hawkins, other writers note that, although individual learning provides the foundation for understanding the organizational learning process, organizational learning is different from the sum of individual learning (Inkpen & Crossan, 1995; Nonaka, 1994). Inkpen and Crossan for example

believe that organizational learning is best understood and developed if it is based on a multilevel perspective. They suggest a framework for organizational learning which incorporates three levels - individual, group, and organization. Inkpen and Crossan (1995) suggest that "a concept of individual learning should be embedded in a concept of group learning, which in turn should be embedded in a concept of organization learning" (p. 598).

Similarly, Dixon (1993) and Hosley, Lau, Levy, and Tan (1994) support the concept of three levels of learning in their discussions of competitive advantage for organizations in an ever-changing business environment. Dixon (1993) emphasizes that "organizational learning is an outcome of three overlapping spheres of activity - individual learning, team learning, and system learning" (p. i). Hosley et al. (1994) conclude that "learning at all levels of an organization [individual, team, and organization] is essential to maintain a competitive advantage in an increasingly turbulent environment" (p. 5). Individual, group, and organization levels of learning are undoubtedly the components of successful organizational learning.

Learning at the Level of the Individual

Some organizational learning theorists believe that individual learning is the only learning that needs to be considered (March & Olsen, 1975; Simon, 1991; Thompson, 1995). For example, Simon (1991) states that, "all learning takes place inside individual human heads; an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members that have knowledge the organization didn't previously have" (p. 25). Similarly, Thompson (1995) states that "... an organization itself doesn't learn - people learn" (p. 86).

Others theorists assert that although organizational learning is very dependent on individuals it is not merely individual learning. These writers propose that organizations can only learn through the actions and experiences of individuals. The significance of this is captured by Kim (1993) in his statement:

The importance of individual learning for organizational learning is at once obvious and subtle - obvious because all organizations are composed of individuals; subtle because organizations can learn independent of any specific individual but not independent of all

individuals. (p. 37)

Similarly, other writers have made statements supporting that of Kim's. "Individual's learning is doubtless important to organizational learning" (Hedburg, 1981, p. 6). "Just as individuals are the agents for organizational action, so they are the agents for organizational learning" (Argyris & Schon, 1978, p. 19). "A learning process takes place in and through interaction with and between a number of people. Obviously, an organization can only learn because individual members learn" (Swieringa & Wierdsma, 1992, p. 33). "Learning occurs through individuals" (Inkpen & Crossan, 1995, p. 597).

In discussing organizational learning related to individuals, organizational theorists "portray organizational learning as a phenomenon in which individuals in organizations develop cognitive maps" (Edmondson & Moingeon, 1996, p. 24). How individuals see the world, their cognitive map, is moulded by their experiences, assumptions, perceptions, and values. This individual framework has been referred to as theories-in-use (Argyris & Schon, 1978), images (Swieringa & Wierdsma, 1992), and mental models (Kim, 1993; Kreutzer, 1995; Senge, 1990). Senge for example, describes mental models as "deeply ingrained assumptions, generalizations, or even pictures or

images that influence how we understand the world and how we take action" (p. 8). Kreutzer (1995) states that a mental model is "a map, a picture of the territory. We live in our own interior worlds, in the worlds of our own experience, in our individual versions of reality" (p. 232).

Kim (1993), in his model of individual learning in an organizational setting, illustrates the importance of mental models. He discusses operational and conceptual learning leading to new frameworks in individual mental models. He believes that mental models are reframed through the interplay of operational and conceptual learning. "Operational learning represents learning at the procedural level, where one learns the steps in order to complete a particular task" (p. 40). "Conceptual learning has to do with the thinking about why things are done in the first place, sometimes challenging the very nature or existence of prevailing conditions, procedures, or conceptions" (p. 40). Kim believes that, as the cycle of conceptual and operational learning informs and reframes mental models, learning results.

Inkpen and Crossan (1995) propose that the learning process at the individual level is interpreting. Interpreting is the process by which individuals incorporate experiences,

perceptions, and insights into their cognitive map with a subsequent "change in individuals beliefs or schemas" (p. 598). They believe that this change in individual's mental maps through individual learning provides the grounding for organizational learning. Senge (1990), as well, develops the notion of mental models as a discipline in building a learning organization. He believes that "mental models are active - they shape how we act" (p. 175). He believes that surfacing, testing, and improving our internal pictures of how the world works presents an opportunity for genuine learning "rather than merely reinforcing prior views" (p. 186).

Learning at the Level of the Group

A number of organizational learning theorists assert that organizational learning is incomplete if no sharing of information occurs. The information processing perspective, which emphasizes the need to communicate and distribute information, is an integral part of organizational learning (Daft & Weick, 1984; Hawkins, 1994; Huber, 1991; Seely-Brown & Duguid, 1991; Shrivastava, 1983; and Wieck, 1979). As a result, the notion of groups and teams as learning units has

been proposed within the organizational literature. Hawkins (1994) for example, argues for a relationship-based view of learning (p. 79). He states that organizational learning theorists need to "move away from believing that learning just resides within people, and to become aware that learning is also held between people" (p. 74). Like Hawkins, many other organizational learning theorists see beyond the individual to the group as an important component to organizational learning (Inkpen & Crossan, 1995; Senge, 1990; Stata, 1989; Swieringa & Wierdsma, 1992; Vogt, 1995).

Stata (1989), for instance, in his discussion of the need for management innovation, organizational learning, and organizational change to sustain competitive advantage emphasizes insight and knowledge sharing, and teamwork as fundamental processes. Stata (1989) states "many high-priority changes require interdivisional cooperation" (p. 70), but "change is blocked unless all the major decision makers learn together, come to share beliefs and goals, and ... take the actions necessary for change" (p. 64). This meshing of beliefs and actions at the group level has been termed "integrating" by Inkpen and Crossan (1995, p. 598). Like Stata, they believe that the product of a coordinated group

process is the integration of "shared beliefs and concerted actions" (p. 598). They support the group level process and have incorporated it into their organizational framework consisting of group, as well as individual, and organization learning. Thus Inkpen and Crossan, like Stata, believe in organizational members sharing, learning, and taking concerted action to maintain a competitive edge in today's business environment.

As well, Swieringa and Wierdsma (1992) go beyond the individual for organizational learning. They state that "individual learning is a necessary but not a sufficient condition for organizational learning" (p. 33). They focus on the "collective learning process" (p. 33) to illustrate organizational learning and organizational behaviour. They conclude that the learning process relevant to organizations "takes place in and through interaction with and between a number of people" (p. 33). Swieringa and Wierdsma (1992), are by no means eliminating the significance of individual learning in organizational learning, but rather highlighting the importance of group learning.

While Dixon (1993) uses the adjective "key element" to emphasize the significance of team learning for organizational

learning, Vogt (1995) focuses on team learning as an important element in what he refers to as the DNA of business learning. Dixon illustrates that team learning has far-reaching beneficial effects in an organization for both the individual and the system. Since team members share data, information, and knowledge, "teams facilitate individual learning" (p. 6). Also, the interaction of organizational members can result in "common understanding about the processes and requirements of other divisions and work units, as well as knowledge about the system as a whole" (p. 7). To Vogt, "team learning is the art of establishing trust, framing motivating questions, and engaging in the generation of new perspectives through the art of dialogue" (p. 295). He realizes that team learning is not an activity that can or should be segregated from other activities, but rather associated with the interrelationships of coaching, asking questions, and observing as the basis for organizational learning.

While some theorists are willing to support the importance of teams as a fundamental building block of organizational learning, Senge (1990) goes so far in his assertions about teams that he states, "unless teams can learn, organizations cannot learn" (p. 70). Senge (1990),

sees team learning as a logical, instrumental, and necessary step in organizational learning. He asserts, "individuals learn all the time and yet there is no organizational learning" (p. 236). He defines team learning as "the process of aligning and developing the capacity of a team to create the results members truly desire" (p. 236). To Senge, the positive effects of the team concept on organizations is immeasurable. Team learning is paramount for organizational learning.

If teams learn they become a microcosm for learning throughout the organization. Insights gained are put into action. Skills developed can propagate to other individuals and to other teams. The team's accomplishments can set the tone and establish a standard for learning together for the larger organization. (p. 236)

Within the organizational literature group learning has not displaced individual learning, but rather has been recognized as a significant contributor to organizational learning. Theorists emphasize that interaction, communication, and knowledge sharing offer opportunities for organizations to learn. While by no means eliminating

individual learning, some theorists are willing to discuss groups and teams as legitimate learning entities and they are willing to incorporate groups into organizational learning frameworks. Whether team learning acquires the status of an absolute necessity, as is believed by Senge, will require further study and deliberation.

Learning at the Level of the Organization

Although individual learning provides the foundation for understanding the organizational process (Nonaka, 1994), organizational learning is different from the sum of individual learning (Argyris & Schon, 1978; Dodgson, 1993; Fiol & Lyles, 1985; Hedberg, 1981; Inkpen & Crossan, 1995; Lundburg, 1989). To Lundburg (1989),

Organizational learning is not simply the sum of each member's learning. Organizations, quite unlike their members, seem to develop and maintain systems that not only influence their members but are then transmitted to others. Though individual learning is important to organizations, it does not characterize organizational learning at the strategic level or in unique situations. Organizational learning permits organizations to build

widespread understandings of both internal and external circumstances. (p. 67)

Hedberg (1981), likewise, asserts that there is a pattern of interaction that exists in organizations. "Organizations do not have brains, but they do have cognitive systems and memories" (Hedberg, 1981, p. 3). In addition to Hedberg, a number of theorists acknowledge and define these organizational memories, and routines (Inkpen & Crossan, 1995; Levitt & March, 1988; Nelson 1991). Levitt and March (1988), for example, state that "the generic term 'routines' includes the forms, rules, procedures, conventions, strategies, and technologies around which organizations are constructed and through which they operate" (p. 320). Similarly, Nelson (1991) relates routines to a set of tasks that an organization is capable of doing in a reasonably coherent fashion. In addition, Inkpen and Crossan (1995) state that routines are "the persistent features of surviving organizations. Routines are embedded in the organization and are reflected in an organization's consistency of behaviour" (p. 598).

Since organizations preserve certain behaviours, mental maps, and norms over time, and represent patterns of interactions that endure even when individuals leave (Hedberg,

1981; Weick, 1979), writers in the organizational learning field have attempted to establish the relationship of learning to these routines. They suggest that individuals and groups may learn, but without encoding or embedding this learning into organizational routines, the organization will not have learned (Argyris & Schon, 1978; Dodgson, 1993; Fiol & Lyles, 1985; Inkpen & Crossan, 1995; Levitt & March, 1988).

In their discussion of organizational routines, Argyris and Schon (1978) and Dodgson (1993) discuss the significance of the individual to the success of the group and the organization. While Argyris and Schon indicate that individuals are "agents" for organizational learning, they also emphasize that for organizational learning to occur, "learning agents' discoveries, inventions, and evaluations must be embedded in organizational memory" (p.19). They believe that whatever the organization has learned through the individuals that comprise it, must be implanted or embedded in the collective organizational memory. Likewise, Dodgson (1993) emphasizes the importance of individuals. He concludes that "individuals are the primary learning entity in firms, and it is individuals which create organizational forms that enable learning in ways which facilitate organizational

transformation" (p. 377). Although his focus is on the individual influencing the collective process he does refer to the importance of interaction among organizational members. Dodgson goes on to state that "shared norms and values are agreed to be indicative of organizational rather than individual learning" (p. 382).

Unlike Argyris and Schon (1978) and Dodgson (1993), Levitt and March (1988) and Hedberg (1981) focus less on the individual and discuss organizational learning in terms of associations, cognitive systems, and memories at the organizational level. Also, they believe that these systems persevere, independent of specific organizational members. Levitt and March (1988) highlight the persistence of routines in their statement, "routines are independent of the individual actors who execute them and are capable of surviving considerable turnover in individual actors" (p. 320). Similarly, Hedberg states that "members come and go, and leadership changes, but organizations' memories preserve certain behaviours, mental maps, norms, and values over time" (p. 3).

Influencing routines has been discussed by Inkpen and Crossan (1995), Argyris and Schon, (1978), and Levitt and

March (1988). Inkpen and Crossan believe that the lessons of organizational experience can be accumulated in an organization's routines. They indicate that an organization learns when new experiences are encoded into the organizational routines, a process they call "institutionalization" (p. 598). Argyris and Schon (1978) focus on organizational inquiry, discovery, and double-loop learning to restructure routines. For Argyris and Schon, double-loop learning involves "those sorts of organizational inquiries which resolve incompatible organizational norms by setting new priorities and weightings of norms, or by restructuring the norms themselves together with associated strategies and assumptions" (p. 24). To Levitt and March (1988), "organizations are seen as learning by encoding inferences from history into routines that guide behaviour" (p. 320). They believe that trial-and-error experimentation and the search for alternate routines by organizational members, challenge the status quo, and can influence organizational routines and behaviours. They believe that the likelihood that a routine will be used is increased when it is associated with success in meeting a target, decreased when it is associated with failure.

Although individual learning is important to organizational learning, organizational learning is not simply the sum of each members' learning. Organizations develop systems, which are maintained despite personnel turnover and the passage of time. Within the literature, organizational learning is considered to have occurred if the organizational norms, routines, and memory are influenced or developed. Fiol and Lyles (1985) summarize this as they conclude "organizations, unlike individuals, develop and maintain learning systems that not only influence their immediate members, but are then transmitted to others by way of organization histories and norms" (p. 804).

Conclusion

Despite the current popularity of organizational learning, and the numerous definitions available, "a clear definition of [organizational] learning has proven to be elusive over the years" (Garvin, 1994, p. 3.65). However, common to them all is the concept that organizational learning is a process and a product. It is generally accepted in the literature that the processes of organizational learning, such as inquiring, questioning, discovering, creating, will lead to

a change in behaviour, adaptation, or action, the product. Since there is presently a lack of consensus on a clear definition of organizational learning, the organizational literature and the educational reform literature may benefit from a delineation of definitions along the process and product orientation.

The existence of two types of organizational learning has existed in the organizational learning literature since Bateson (1972) distinguished between Learning I (detecting errors, reframing processes and selecting among known alternatives), and Learning II (changing the set of available alternatives, re-framing the situation and expanding the realm of activity). Subsequent writers, while using their own labels, appear to accept and discuss the same types of learning.

In developing theories of organizational learning, awareness of the two types of learning and the differences between the two types seem relevant and can provide the framework for understanding the complexities of organizational learning. Argyris and Schon (1978) stress however, that "the distinction between single and double-loop learning is less a binary one than might first appear" (p. 25). Similarly,

Edmondson and Moingeon (1996) state that the two levels of learning "are not meant to suggest mutual exclusivity" (p.27).

Despite ... apparent commonalities [in the literature] in discerning two levels of learning, and despite the theoretical precision, operationalizing these different levels introduces some ambiguity. Distinctions between first and second order learning are often abstract and difficult to identify in real organizational settings. (p. 27)

While Senge (1990) and others suggest sharp distinctions between adaptive and generative learning processes, Lant and Mezias (1996) suggest that "the same processes that lead to first-order learning and convergence can provide the raw material for second-order learning and reorientation" (p. 290). The point is that organizations benefit from both. Edmondson and Moingeon (1996) state that, effective mobilization to become better or faster, termed learning how, and evaluation of opportunities to change governing values or contexts, termed learning why, are "intertwined and interdependent" (p.28). The result is that organizations, whether business or educational, may benefit from members engaging in both types of processes in an ongoing way,

depending on the needs of different situations. They conclude that learning how, and learning why, "offer critical opportunities for success" and "serve as a source of competitive advantage" (p. 28).

Some theorists, such as Simon (1991) think individual learning is all that needs to be considered, whereas Senge (1990) believes that without team learning, there is no organizational learning. Inkpen and Crossan (1995) however, support a multilevel approach of individual, group, and organization. Inkpen and Crossan's perspective on organizational learning shares similarities with Nonaka's (1994) notion of knowledge creation as an upward spiral process, starting at the individual level, moving up to the group level, and then to the organizational level. Although this multilevel perspective offers a viable foundation for organizational study, "the nature of the relationship between individual learning, [group learning], and organizational learning is far from clear, and more work is necessary both on theoretical and empirical dimensions" (Nicolini and Mezner, 1995, p. 730).

In summary, the extent to which organizational learning is individual, group, organization, or some combination, is

yet to be determined and agreed upon by organizational learning theorists. However, as Roth (1996) so succinctly states, "one thing is for certain, the more that individual and teams within the [organizational] system are open to raising questions, rather than (just) providing answers, the more potential the system has to learn" (p. 244). While a multi-level perspective provides a framework for study, it is important for organizational learning theorists to remember that there are links between each level and that organizational learning is a dynamic, "integrative concept that can unify various levels of analysis: individual, group, and corporate" (Dodgson, 1993, p. 376).

Schools and school systems are organizations. Clearly, individual learning can be recognized within the school system. Team learning can and should play a valuable role in organizational learning and subsequent educational reform. The processes to enhance collective learning are reviewed in Paper Two, Team Learning: Effectiveness Through Dialogue, as a stepping stone to educational reform.

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Paper Two
Team Learning:
Effectiveness Through Dialogue

Team Learning:
Effectiveness Through Dialogue

W. Craig Hayden

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"Few, if any, of the problems businesses face nowadays can be handled by one person acting alone" (Handy, 1995, p. 47). In the ever-changing, dynamic, global marketplace which organizations find themselves today, teams are of paramount importance. Although individual learning has been documented as fundamental to organizational learning (Argyris & Schon, 1978; Hedburg, 1981; Inkpen & Crossan, 1995; Simon, 1991), Swieringa and Wierdsma (1992) point out that more is required:

Obviously, an organization can only learn because its individual members learn. Without individual learning there can be no question of organizational learning. On the other hand, an organization has not automatically learned when individuals within it have learned something. Individual learning is a necessary but not a sufficient condition for organizational learning. (p. 33)

Similarly, Hawkins (1994) sees beyond the individual to the group as a fundamental component of organizational learning and states that we need to "move away from believing that learning just resides within people, and to become aware that learning is also held between people" (p. 74). Pinchot

and Pinchot (1994) believe that "learning springs from the wealth of communications in the team's collaborations within itself" (p. 68), and Senge (1990) is such a firm believer in teams that he asserts "unless teams can learn organizations cannot learn", and "team learning is vital because teams, not individuals, are the fundamental learning unit in modern organizations" (p. 10). Thus, to many organizational learning theorists, the essence of organizational learning depends on team learning.

While teamwork has emerged as a management strategy in organizations, a team in name only is insufficient. It is important that teams be effective. The ability for teams to function collectively appears to require interpersonal communication that facilitates learning. Isaacs (1993) reminds us that while there is a need to effectively collaborate, not all organizational communication is productive.

Unfortunately, most forms of organizational conversation, particularly around tough, complex, or challenging issues lapse into debate (the root of which means "to beat down"). In debate, one side wins and another loses; both parties maintain their

certainties, and both suppress deeper inquiry. Such exchanges do not activate the human capacity for collective intelligence. (Isaacs, 1993, p. 24)

Of an even more significant impact is the potential that teamwork will result in "groupthink" (Janis, 1996), in which members suppress critical thinking and critical challenges of the group's decisions in an effort to remain amiable, loyal, and to avoid disunity within the group. Groupthink can limit effective decision-making and reduce group learning.

Isaacs (1993) goes on to state that "problems are too complex, the interdependencies too intricate, and the consequences of isolation and fragmentation too devastating" (p. 24) for organizational members, at any level, to think individually. He emphasizes that the "capacity to think together - to develop collaborative thought and coordinated action" will serve individuals and organizations better as the future unfolds.

Senge (1990), in his discussion of the disciplines of a learning organization, points out that teams, as a collective entity, have the capacity to learn. He emphasizes the interrelationships of team learning with other disciplines in

creating a learning organization. He emphasizes that team learning

builds on the discipline of developing shared vision. It also builds on personal mastery, for talented teams are made up of talented individuals. But shared vision and talent are not enough. The world is full of talented individuals who share a vision for a while, yet fail to learn. (p. 236)

Senge (1990) defines team learning as "the process of aligning and developing the capacity of a team to create the results members truly desire" (p. 236). He makes reference to sports, performing arts, science, and business, "where the intelligence of the team exceeds the intelligence of the individuals on the team, and where teams develop extraordinary capacities for coordinated action" (p. 10). He goes on to say that "when teams are truly learning, not only are they producing extraordinary results but the individual members are growing more rapidly than could have occurred otherwise" (p. 10).

Likewise, Roberts (1994) affirms the importance of the growth of individual members and the alignment of team members. She emphasizes both personal knowledge and shared

knowledge for the development of teams. She defines team learning as "the process of learning how to learn collectively" (p. 355). She states that it has "nothing to do with the 'school-learning' of memorizing details to feed back in tests", but rather, "starts with self-mastery and self-knowledge, [and] involves looking outward to develop knowledge of, and alignment with, others on your team" (p. 355).

In their discussion of team learning, Senge, Kleiner, Roberts, Ross, and Smith (1994) also incorporate self-mastery and self-knowledge. They emphasize that when team members develop reflection and inquiry skills, it helps individual team members to become aware of the assumptions and beliefs that link "what we see" to "what we conclude", to bring tacit assumptions to the surface, and to develop or change mental models (p. 352). Similarly, Kim (1995) states, "the interplay between participants as they propose new strategies and explain their reasoning, helps them to surface and clarify assumptions" (p. 361). The result is team members who are more in touch with their thoughts and feelings, who are better able to share assumptions, and who can learn together.

Vogt (1995) sees team learning as an important element in what he refers to as the DNA of business learning. He defines

team learning as "the art of establishing trust, framing motivating questions, and engaging in the generation of new perspectives" (p. 296). Vogt's definition, like others, illustrates the existence of the interconnectedness of team members, and the subsequent new perspectives that can develop from open, trusting individuals working in a coordinated fashion.

Trust among team members offers an opportunity for team members to learn, whereas lack of trust is an obstacle to learning. Argyris (1985) suggests that lack of trust results in defensive routines, "habitual ways of interacting that protect us and others from threat or embarrassment, but which also prevent us from learning" (Senge, 1990, p. 237). Ryan (1995) agrees, stating "our habits of communicating have become a kind of prison for us, [maintaining] the very defenses that we need to eliminate if we are to learn together" (p. 288). Similarly, Kofman and Senge (1995) emphasize that defensive routines oppose productive dialogue and discussion and consequently block learning. They state, many of us have developed defenses that have become second nature - like working out our problems in isolation, always displaying our best face in

public, and never saying "I don't know". The price we pay is enormous. In fact, we become masters of what Chris Argyris calls "skilled incompetence", skilful at protecting ourselves from the threat and pain that come with learning, but also remaining incompetent and blinded to our incompetence. (p. 20)

The result is that defensive routines block collective learning and as a result, teams can never reach their full potential.

In summary, team learning is about self-knowledge, reflection, and collective thinking. As stated by Greenwood, Wasson, and Giles (1993), team learning provides participants with the opportunity to "gain self-understanding from the feedback of others in the group", and "develop the skills of critical reflection and reframing, which allows them to examine the taken-for-granted assumptions that have prevented them from acting in new and more effective ways" (p. 8). It is a collective entity since it requires team members to "work together to share assumptions, ... build new mental maps, and actively transfer their learning to others" (Greenwood et al., 1993, p. 8).

Drawing upon the theory of dialogue by a quantum physicist, David Bohm, Senge (1990) suggests that dialogue is a necessary condition for team learning to take place. He notes that the word dialogue comes from the Greek dialogos. Dia means "through". Logos means "the meaning" (p. 240). Senge (1990) believes that as each person adds ideas in a collaborative interaction, the group accesses a larger pool of common meaning. Similarly, dialogue, according to Bennett and Brown (1995), "is a process of collaborative conversation" (p. 176). Thus, dialogue is proposed as a form of conversation, enabling teams to learn collectively (Bennett & Brown, 1995; Bohm, 1990; Dixon, 1994; Isaacs, 1993, 1994; Schein, 1993, 1996; Seivert, Pattakos, Reed, & Cavaleri, 1996; Senge, 1990;).

Dialogue Contrasted with Discussion

Senge (1990) states that there are basically two types of discourse, dialogue and discussion.

In dialogue, there is a free and creative exploration of complex and subtle issues, a deep "listening" to one another and suspending of one's own views. By contrast, in discussion different

views are presented and defended and there is a search for the best view to support decisions that must be made at this time. (p. 237)

Senge (1990) emphasizes that both dialogue and discussion are important for team learning. He states that, "both dialogue and discussion are important to a team capable of continual generative learning, but their power lies in their synergy which is not likely to be present when the distinctions between them are not appreciated" (p. 240). For team learning, it is important then to recognize the difference between the two types of discourse.

Isaacs (1996) sees dialogue as a facilitating process, "enabling groups of people to disidentify with polarized positions and engage in critical, collective inquiry into their underlying assumptions and tacitly held views" (p. 20). During discussion however, the focus is to have one's views accepted by the group; "to win" the discussion (Isaacs, 1996, p.20). "The word discussion comes from the same root as percussion and concussion and suggests the pounding home of ideas in a confrontational manner" (Dixon, 1993, p. 6). In discussion participants are more interested in their own opinions than in listening and attempting to understand the

viewpoint of another person. Senge (1990) concludes that "you might occasionally accept part of another's person's view in order to strengthen your own, but you fundamentally want your view to prevail" (p. 240).

The unfortunate reality in many of today's organizations is that debate or discussion are the dominant form of conversation among group members. As Murphy (1995) summarizes:

My observations in business, political, and social settings is that people spend an inordinate amount of energy asserting and debating which position is right or wrong. Such thinking is not only destructive but flawed. ... The important question, however, is not whether something is right or wrong, but is it helpful for the purpose at hand. Such a small shift in thinking could greatly ease the way to creating a much more productive and much more human world. It would certainly go a long way towards removing some of the more serious barriers to learning and to creating learning organizations. (p. 205)

Similarly, Senge (1990) notes that many teams have discussions not dialogue. He also concedes that discussions are useful and necessary. There are occasions, for instance, when organizational teams have to make decisions to carry out the functions of the organization. Senge maintains that "on the basis of commonly agreed analysis, alternate views need to be weighted and a preferred view selected. When they are productive, discussions converge on a solution or a course of action" (p. 247). Ross (1994) is supportive of this in his explanation of skilful discussion. "In skilful discussion, the team intends to come to some sort of closure - either to make a decision, reach agreement, or identify priorities" (p. 386). While dialogue offers a learning team the opportunity to examine each other's assumptions and mental models surrounding an issue, when a team needs to reach agreement and make decisions, discussion is needed.

Dialogue and discussion however, are interdependent, and useful functions in team learning. With dialogue, team members can examine thought processes, underlying issues, and motivations. Discussion, on the other hand, can enable a team to emerge from their deliberations with an agreed upon course

of action. As summarized by Senge (1990), teams that function best, acknowledge and understand the importance of both.

A learning team masters movement back and forth between dialogue and discussion. ... A unique relationship develops among team members who enter into dialogue regularly. They develop a deep trust that cannot help but carry over to discussions. They develop a richer understanding of the uniqueness of each person's point of view. (p. 248)

Dialogue for Team Learning

To illustrate that dialogue offers a "unique vision of team learning" (Senge, 1990, p. 248) in that its purpose is to build collective understanding and meaning for the team, it is important to understand the components of dialogue as they relate to team learning. Through the processes of suspending assumptions, listening, reflecting, and creating a culture of cooperation, dialogue slows down the speed at which groups converse.

The Purpose of Dialogue

Numerous writers have maintained that organizational members build up cognitive maps or mental models of their work context and that from these individual maps, collective meaning structures can be built at the organizational level (Dixon, 1994; Easterby-Smith, 1997; Kim, 1993; Nonaka, 1994; Saint-Onge, 1996; Schein, 1992, 1996). For example, culture has been defined by Schein (1992, 1996), as a set of basic tacit assumptions about how the world is and ought to be that a group of people share and that determine their perceptions, thoughts, feelings, and to some degree, their overt behaviour.

As emphasized by Bachm (1990), Seely-Brown and Duguid (1991), Hodgetts, Luthans, and Lee (1994), Kofman and Senge (1995), and Schein (1992, 1996), organizations tend to break down into sub-units, or functional units of the organization. As a result, the sub-units are likely to develop their own "subcultures (implying different languages and different assumptions about reality, i.e. different mental models) because of their shared core technologies and their different learning experiences" (Schein, 1993, p. 41). Hodgetts et al. (1994) states that "every complex organization has a variety

of subcultures - departments, divisions, levels of management, and the like. Each has its own special interests, mental models of how the business works, and quite possibly its own language (jargon)" (p. 13). Bohm (1990), as well, identifies the existence of subcultures. He notes that collective cultural assumptions exist in all groups, and in larger groups, "many subcultures" may be present.

The resulting influence of these functional units and subsequent subcultures is fragmentation (Barrett, 1995; Kofman & Senge 1995; Seivert, Pattakos, Reed, & Cavaleri, 1996). Kofman and Senge believe that while many of the challenges organizations face today are systemic, fragmentation is a fundamental problem. They believe that organizational members tend to fragment problems into pieces, study each component in isolation, and then synthesize the components back into the whole and hope that the problem is solved. As well, fragmentation "results in 'walls or chimneys' that separate different functions into independent and often warring fiefdoms" (p. 8). Similarly, Seivert et al. (1996) discuss the interconnectedness of all things. They express a concern with organizational members ignoring this interconnectedness and the resulting organizational problems. They maintain that

"our fragmentation and insistence on separateness is responsible for our inability to solve systemic and organizational problems" (p. 368).

Despite the alignment of individuals along a cultural dimension, and subsequent communication failures, organizations interested in organizational learning and development must find ways to overcome the obstacles. Schein (1993) states that "we need ways of improving our thought processes, especially in groups where the solution depends on people reaching at least a common formulation of the problem" (p. 40). Schein talks in terms of organizational effectiveness, and emphasizes that:

organizational effectiveness is increasingly dependent on valid communication across subcultural boundaries. Integration across subcultures (the essential co-ordination problem) will increasingly hinge on the ability to develop an overreaching common language and mental model.

Any form of organizational learning, therefore, will require the evolution of shared mental models that cut across the subcultures of the organization. (p. 41)

Several writers focus on dialogue as the form of enhanced communication needed to realize effective cross-cultural collaboration. Schein (1996) emphasizes that organizations must find ways of communicating across cultural boundaries to create common ground, and to reduce conflict among the cultures. "Communication that stimulates mutual understanding rather than mutual blame" (p. 19) is a starting point for organizations serious about organizational effectiveness. Suggestions from the literature that incorporate dialogue and culture include dialogue to "develop higher levels of collaboration" (Hodgetts, Luthans, & Lee, 1994, p. 13), "create hallways of learning" (Dixon, 1997, p. 25), "crystallize new organizational knowledge" (Nonaka, 1994, p. 25), or "share mental models" (Schein, 1993, p. 41).

Schein (1993, 1996) and Bohm (1990) look to dialogue as a fundamental, effective first step to valid communication and the development of shared mental models across organizational subcultural boundaries. Schein (1993) states, "the evolution of shared mental models ... [makes] dialogue a necessary first step in learning" (p. 41). To Bohm (1990), dialogue enables groups to "share meanings", so that all of the various meanings can come together and the larger group can "work

toward coherence" (p. 16). A coherent meaning in a group has possible broader implications for an organization. As Bohm contends, "such a group might be the germ or the microcosm of the larger culture, which would then spread in many ways - not only by creating new groups, but also by people communicating the notion of what it means" (p. 17).

The central theme of Nonaka's (1994) organizational knowledge creation theory is crystallization. Elevating the knowledge created by organizational members to incorporate it into the knowledge network of the organization requires a "social process which occurs at a collective level" (p. 26). Nonaka terms this crystallization, which is the "process through which various departments within the organization test the reality and applicability of the concept created by the self-organizing team" (p. 25). An important component of crystallization is dialogue. He believes that building both tacit and explicit knowledge is important, but asserts that organizational knowledge creation hinges on the interchange of "continuous dialogue between tacit and explicit knowledge" (p. 14). Continuous dialogue, in a team setting, brings personal tacit knowledge into a social context. It provides a place in which individual perspectives are articulated and enables one

to build concepts in cooperation with others. Crystallization offers an opportunity for organizational team members to cut across subcultures because the social component requires "dynamic co-operative relations" (p. 26) among various functions and organizational departments.

McGill and Slocum (1993) discuss a learning culture as an ideal culture to 'unlearn' the conventional organizational structure, and mold organizations into learning organizations. Within this learning culture, dialogue is of paramount importance. They state that in learning cultures:

groups engage in active dialogue and conversation, not discussions. These conversations are reflective, as opposed to argumentative, and they are guided by leaders who facilitate the building of strong relationships among key stakeholder groups. It is clear to us that to instill a learning culture, managers must set aside their penchant for discussion, embracing conversations and dialogue instead. To create conditions that foster conversation and dialogue, they must realize that face-to-face meetings ... [and] dialogue provides a

forum for people to talk and think about problems together. (p. 76)

While dialogue encompasses interpersonal communications, reflective processes, and a variety of group dynamics, its ultimate goal is to enhance the collective power of the group through the team learning process. Bohm (1990), discusses dialogue and collective thought emphasizing that for a group, the important point is "not the answer" or "not the particular opinions (of the team members)", but rather "the opening up of the mind and looking at all the opinions" (p. 39). He gives an example of collective thought and being able to think together. "Somebody would give an idea, somebody else would take it up, somebody else would add to it. Thought would flow - rather than there being a lot of different people, each trying to persuade or convince the others" (p. 13).

Schein (1993) sums it up this way: "An important goal of dialogue is to enable the group to reach a higher level of consciousness and creativity", and this is done "through the gradual creation of a shared set of meanings and a common thinking process" (p. 43). Bohm (1990) has compared the collective power of a group to a laser:

Ordinary light is called 'incoherent', which means that it is going in all sorts of directions, and the light waves are not in phase with each other so they don't build up. But a laser produces a very intense beam which is coherent. The light waves build up strength because they are all going in the same direction. This beam can do all sorts of things that ordinary light cannot. (p. 7)

Thus, both Schein and Bohm are stating that while the end result of dialogue is greater collective power for the group, the processes of dialogue are a means to an end.

Characteristics of Dialogue

Open, Face-to-face Communication

Dialogue is face-to-face communication. Buber (1965) in his writings, states that in dialogue, "each of the participants really has in mind the other or others ... and turns to them with the intention of establishing a living mutual relation between himself and them" (p.19). Mutuality is supported by Freire (1970), who states, "self-sufficiency is incompatible with dialogue" and asks the question, "How can

I dialogue if I am closed to - and even offended by - the contributions of others?" (p. 78).

While dialogue has been referred to as good conversation (Brown, 1995; and Bennett & Brown, 1995), it is much more. Although Brown (1995) light-heartedly describes dialogue as communication that "puts people in a frame of mind to slow down, back-off, listen, and reflect" (p. 161), she truly believes that dialogue is a capacity to use interpersonal communication to its fullest extent. She emphasizes, that in an organizational setting, there should not be a problem or crisis to push members to converse in a way that focuses on openness, questioning, listening, and reflecting. She points out that dialogue is more than communication to decide something or do something, but rather it is communication "to build deeper understanding, new perceptions, new models, new paths to effective action, and deeper and more enduring, even sustainable truths" (p. 157).

Group Coherence

Bhm (1980) in his discussion of dialogue, illustrates that there is a constant, flowing, dynamic exchange between the tangible reality of our daily lives (the explicit,

unfolded order) and a deeper, unseen level of reality (the implicate, enfolded order). Bohm asserts that everything is connected, no matter how separate and distinct things appear. Senge (1990) builds on Bohm's discussion of dialogue, emphasizing that dialogue offers an opportunity for team learning within organizations. Senge (1990) also emphasizes the need for members of the team to be aligned, that is, for all members of the team to function as one cohesive unit. Team members must be headed in the same direction, with their energies focused and parallel. Otherwise, he believes that "individuals may work extraordinarily hard, but their efforts do not translate into team effort" (p. 234). Isaacs (1994) describes David Bohm's electron movement analogy to illustrate this concept:

Electrons cooled to very low temperatures act more like a coherent whole than as separate parts. They flow around obstacles without colliding with one another.... At higher temperatures however, they begin to act like separate parts, scattering into random movement and losing momentum.

Particularly around tough issues, people act more like separate, high temperature electrons.

They collide and move at cross-purposes. Dialogue seeks to produce a cooler, shared environment, by refocusing the group's shared attention. (p. 360)

Dialogue aligns and re-focuses the efforts of the group and steers them in the right direction. It creates a more cohesive team and encourages the discovery of meanings behind individual ideas.

Reflective Process

Dialogue is a reflective process. If individuals can reflect, acknowledge, and explore their own thinking, and then be open enough to share and explore the thought patterns of others, individuals in groups "will think better, collectively, and communicate better" (Schein, 1993, p. 43). Indeed, Schein so strongly believes in focusing on our own thinking process, and delving into self-analysis to understand one's own assumptions, that he concludes, "much of the individual's work (in teams) is internal, examining one's own assumptions" (p. 44), and "we have to learn to listen to ourselves before we can really understand others" (p. 46).

Cavaleri and Fearon (1996) summarize reflection with the following:

When people pause to discover the meaning of their experiences in relation to their beliefs, we say that they have engaged in the process of reflecting. Reflecting is a means of discovering what one really knows (or doesn't know). When people discover that either they know or don't know something, then they have learned through the benefit of their experience. (p. 14)

Other writers have also examined this process of reviewing one's thinking. Weintraub (1995) illustrates that critical thinking involves questioning the assumptions underlying personal thinking and acting, then restructuring those understandings and being ready to think and act differently on the basis of this critical questioning. Meisel and Fearon (1996) refer to the activity of thinking about one's own problem solving processes as metacognition. Seivert et al. (1996) discusses autognomics as a learning process, meaning "self-knowing" (p. 357), which "encourages us to dig up what society, including our learning institutions, has encouraged us to bury - our unique identity, and with it our unique learning potential" (p. 359).

Gibbons (1990), in a discussion of how people learn to learn, points out that being objective about one's thoughts has many benefits. He asserts:

Stepping back from a task, stepping outside ourselves, enables us to consider how it can best be accomplished and to examine and shape our thoughts, feelings, and actions ... it [enables] us to examine, imagine, choose, and manage the experiences we have. (p. 97)

DeChant (1996), as well, discusses learning how to learn, and refers to Langer's (1989) "mindfulness" to emphasize the competency of giving direction and taking responsibility for learning activities. DeChant states, that through mindfulness, "we become aware of ourselves as learners in every situation and subsequently come to exercise greater control over our learning strategies" (p. 99).

Thompson (1995) believes that the starting point for learning is curiosity. He believes that global competition, the explosion in information technology, and the emergence of a knowledge-based economy is forcing organizations to create organizational conditions that lead to the continual acquisition of knowledge. He stresses that through structured

learning situations, employees can truly gain greater understandings of themselves and allow their natural orientations to learning to take over so that they can develop their learning capabilities. He states that, "once people begin to be curious - if they are in a well structured learning environment - they will then begin genuinely and honestly to experiment with new possibilities" (p. 93).

Assumptions Suspended

Dialogue requires assumptions to be suspended. Schein (1993), in referring to an atmosphere of discovery and understanding, states "suspension allows reflection" (p. 47). Dixon (1993) and Roberts (1997) like Schein, believe that to facilitate reflection, it is imperative to suspend one's assumptions. Dixon (1993) says, "team members must be willing to hold their opinions as hypotheses to be tested" (p. 6). Roberts (1997) states "to participate in deliberations, people must be aware of their assumptions and be willing to hold them up for examination" (p. 128). Senge (1990) points out that suspending assumptions is not about discarding anything. He contends,

to suspend one's assumptions means to hold them, ... hanging in front of you, constantly accessible to questioning and observation. This does not mean throwing out our assumptions, suppressing them, or avoiding their expression ... it means being aware of our assumptions and holding them up for examination. (p. 243)

Bohm (1990) takes it a step further by emphasizing that, not only is it important to suspend assumptions to facilitate an understanding of our own assumptions, but we must be willing to suspend judgement regarding other people's thought. A integral part of dialogue, according to Bohm (1990), is for "people to realize what is on each other's minds without coming to any conclusions or judgements" (p. 12). Discovery, understanding, and learning in a team setting cannot be accomplished if team members are defending their assumptions, or passing judgement. According to O'Brien (1996), "to learn we must be able and willing to make fundamental, and often implicit assumptions explicit and subject to testing" (p. 533).

Expose Mental Models

Dialogue offers an opportunity for organizational members to expose their mental models and develop new perceptions and models as appropriate. Swieringa and Wierdsma (1992) realize the significance of organizational members' assumptions and generalizations and state, "a significant part of an organization is in people's minds, and it is the image of reality stored up in these minds which determine behaviour" (p. 16). Senge (1990) emphasizes that the discipline of managing mental models "promises to be a major breakthrough for building learning organizations" (p. 174).

The significance of mental models has profound effects and can create problems for organizations according to Argyris (1990). He illustrates that theories that are actually put into use are often different from those espoused, and that difference has a tendency to become 'undiscussable' in the workplace. The inability to discuss these differences limits possibilities for learning. Dialogue, however, offers an opportunity to expose mental models. It assumes that participants will be open to diverse points of view to enhance their learning. It assumes that the reasoning and rationale

behind perspectives is an opportunity to explore and learn. Roth (1996) for example states that, "the more people recognize that others hold different mental models, ... and accept multifaceted perspectives, the more learning is likely to take place" (p. 239), and "learning on a collective or systems level can take place only when theories that actually guide behaviours are articulated" (p. 243). The surfacing, testing, and improving mental models associated with this discipline is best formulated, according to Senge (1990), through dialogue in a team learning concept.

Listening

Imperative in the dialogue process is listening. Listening facilitates dialogue. For team members to fully exploit the reflective learning process and to contribute to the team in a dialogue environment, listening offers much promise. Bennett and Brown (1995), state that dialogue "is not about agreement or consensus. Rather it is about listening for deeper understanding and insight" (p. 172).

Dialogue links real listening skills with valuing the feelings and opinions of others on the team, leading some writers to believe that "listening will be recognized and

emphasized as the single most important element of a learning organization's communications" (Montgomery & Scalia, 1996, p. 459). A great deal can be learned from listening and trying to understand the reasoning behind another's viewpoint, as well as from explaining one's reasoning to the team so that they too, can understand the rationale behind the position.

When a group begins to advance in the practice of dialogue, as William Isaacs points out, 'a new type of listening emerges'. People begin to 'listen to the whole', hearing not only what individuals say, but deeper patterns of meaning that flow through the group. For example, it is quite common in advanced dialogues for people to report that someone else gave voice to the thoughts they were about to say. (Senge, Kleiner, Roberts, Ross & Smith, 1994, p. 20)

Conclusion

Dialogue is multi-faceted. It involves self-analysis, listening, reflecting, and where appropriate, altering mental models. It is a whole dynamic way of interacting. Isaacs (1993), offers a definition of dialogue, which incorporates a

number of components. He states, "dialogue is a discipline of collective thinking and inquiry, a process for transforming the quality of conversation, and in particular, the thinking that lies beneath it" (p. 25). From this definition, he points out that thinking is fundamental to dialogue, that dialogue is a process, and the purpose of dialogue is collective thinking.

In today's organizations, there is an increased focus on team learning and team effectiveness. Sherriton and Stern (1997), for example, in their discussion of the incorporation of team culture into corporate culture, state that

team cultures require ... greater collaboration, inclusiveness, and co-ordination of stakeholders in planning, implementation, and evaluating results. There needs to be a greater willingness to share and shift resources and enhance interdepartmental teamwork. (p. 54)

Writers in both the business and educational fields are turning to dialogue as an effective approach to organizational learning and cross-cultural communication.

Organizational learning theorists have presented the applicability of dialogue to address organizational problems and to enhance generative organizational learning and reform.

Dixon (1994) for example, in her discussion of the organizational learning, states that organizational learning involves "collective rather than only individual interpretation of information" (p. 6), and "organizational dialogue is interaction in a collective setting that results in mutual learning" (p. 83). Schein (1993) summaries the purpose of dialogue in his statement, "dialogue aims to build a group that can think generatively, creatively, and, most important, together" (p. 43).

Building on the processes of listening, exposing mental models, reflection, and others, dialogue builds a common experience base that allows us to learn collectively (Schein, 1993). Considering the educational system has numerous levels and divisions, and everyone has different and competing mental models, the system could benefit from the collective learning of dialogue. Involving the stakeholders of education in the process of dialogue to develop a common understanding and a common approach to educational change is needed for successful educational reform.

Senge (1990) maintains, the capacity of team members to suspend assumptions and enter into genuine thinking together, is complementary to and needs to be balanced with discussion,

the search for the best view to make decisions. While a learning team "masters movement back and forth between dialogue and discussion" (Senge, 1990, p. 247), most groups and teams lack the ability to distinguish between the two. Murphy (1995) agrees, concluding that in many of today's organizations, including educational organizations, debate or discussion dominate conversation, and the potential for learning is thwarted.

Although "the development of a theory of dialogue remains in an embryonic stage" (Isaacs, 1993, p. 31), it is "an emerging and potentially powerful mode of inquiry and collective learning for teams" (p. 39), and for system wide organizational learning in both the business and educational fields (Senge, 1990; Jenlink & Carr, 1996).

Building on the foundation of this research in organizational learning, team learning, and dialogue, Paper Three, Dialogue as the Foundation of Education Reform, will investigate the applicability of dialogue to accomplish successful education reform.

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Paper Three

Dialogue as the Foundation of Educational Reform

W. Craig Hayden

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Introduction to Educational Reform

Education reform is an on-going, evolutionary process. The past three or four decades have been years of educational reform (Day, 1997; Fuhrman, Elmore, & Massel, 1993; Fullan, 1991, 1993; Hargreaves, 1994; Louis & Miles, 1990; Sarason, 1990; Stoll & Fink, 1996). Although "educational reform generated a high level of activity, it has yet to exert much influence over the processes of schooling related to student learning" (Fuhrman, Elmore, & Massell, 1993, p. 5). Educational reform has been summed up by Fullan (1993) as an "uphill battle" for administrators and educators, noted more for its survival rather than development. "Hardly a year has passed without some reform being mooted, negotiated, or imposed" upon the educational system (Day, 1997, p. 440).

"Since the 1960's, educational change has become a familiar part of teachers' work" (Hargreaves, Lieberman, Fullan, & Hopkins 1998, p. 3). For example, the educational system in the 1960's can be characterized by the 'adoption' of large-scale, inquiry-oriented innovations as the mark of progress (Fullan, 1991). "It was a time in which successive waves of different approaches to reading or mathematical

learning swept through classrooms, each one washing away the marks left by its predecessors" (Hargreaves et al., 1998, p. 3).

Although implementation was "not even contemplated as a problem" during the 60's (Fullan, 1993, p. 1), studies by Goodlad and Klein (1970), Gross, Giacquinta, and Bernstein (1971), and Sarason (1971), brought tremendous attention to the issue of failed implementation as the problem for lack of success of curriculum packages. When it was recognized that "large-scale curriculum innovations rarely progressed beyond the phase of having their packages purchased" (Hargreaves et al., 1998, p. 3), implementation initiatives became the solution. Despite much activity and many programs focusing on implementation, implementation fell short of its' intended goal.

As the limitations of the large-scale curriculum innovations imposed or initiated from faraway became apparent, the assumption developed that during many change-efforts, teachers and administrators represented a major obstacle to successful curriculum implementation.

Following this conclusion, educational researchers began to treat the school as the focal point of educational change

efforts. They questioned whether or not schools could make a difference given social class, family, and other societal conditions outside the purview of the educational sector (Fullan, 1993). The result was the study and development of effective school characteristics. Despite the development of these characteristics, researchers concluded that to achieve the outcomes of an effective school, change strategies need to be tied to a second avenue of research, 'school improvement' (Fink & Stoll, 1998; Reynolds, Hopkins, & Stoll, 1993). The school improvement research largely developed from a reflection on failed reform efforts of the 1960's and 1970's.

While the effective schools and school improvement literature offered clear outlines of what is characteristic of a good school, these were not always easy to accomplish. As time and research progressed, restructuring became the approach to remove impediments to educational reform. School-based management, enhanced roles for teachers in decision making, restructured timetables, collaborative work cultures, shared mission, plus other reforms became current. Despite the development of these school improvement initiatives, Fuhrman, Elmore, and Massel (1993) state, "by virtually all aggregate indices of performance, schools have shown little improvement

since the beginning of the current period of reform" (p. 8). With time and further study, it has been determined that the structures and cultures of schooling have proven to be highly resilient to fundamental change (McCulloch, 1998).

Thus, in spite of much effort, anticipation, and high hopes, "long term curriculum reform has generally failed to generate educational change of a fundamental kind" (McCulloch, 1998, p. 1203). Newman (1998) sums up educational reform with the following personal outlook.

For more than 20 years I've been involved in the professional development of teachers. And in all that time, I think I can safely say that much of my work as a teacher educator has largely been a waste of time. In spite of 50 years of research insights into instructional contexts that support student learning, I visit classrooms today and witness instruction very little different from that of the 1970's, when I began collaborating with teachers. (p. 288)

Overcoming Failed Reform Through Dialogue

The expected results of educational reform efforts have

indeed been disappointing. Although the reasons are numerous and varied, it is apparent that three concerns are significant in inhibiting reform. These reasons incorporate a discussion of top-down mandated changes, complex problems which are unmanageable within the present set-up, and not accounting for the culture of the school (Fuhrman, Elmore, & Massell, 1993; Hargreaves, 1997; Hargreaves Lieberman, Fullan, & Hopkins, 1998; Sarason, 1990). While these are not the only factors affecting reform, it can be argued that overcoming these elements will have a significant impact on favourable educational change.

Given that numerous approaches to educational change have been tried with limited success, it may be time to look toward a more inclusive approach. As Fullan (1995) outlines, the central question becomes, what combination of strategies have any chance of achieving, on a wide scale, greater shared, subjective clarity, will, and skill necessary for coping with the enormous, endemic problem of overload and fragmentation. (p. 234)

Dialogue (Bohm, 1990; Isaacs, 1993; Schein, 1993, 1996; Senge, 1990), a form of interpersonal interaction and communication gaining prominence in the literature to develop

collective thought within groups and teams, and across organizational subcultural boundaries, can address these three impediments to educational reform. Although the root meaning of conversation is "to turn to one another", dialogue is not "mere talk" (Isaacs, 1996, p. 20). Dialogue comes from the Greek word dialogos, dia means "through" and logos means "the meaning". Bohm (1990) and Senge (1990) suggest that the original meaning of dialogue was, "meaning passing or moving through ... a free flow of meaning between people" (Senge, 1990, p. 240).

Dialogue is characterized by open, face-to-face communication (Brown, 1995) incorporating listening (Bennett & Brown, 1995), and reflection (Gibbons, 1990; Schein, 1993). During these processes individuals have an opportunity to suspend assumptions (Dixon, 1993), and expose and examine mental models (Senge, 1990). The result is effective cross-cultural organizational collaboration (Schein, 1996) and the enhanced collective power of the group (Bohm, 1990). The free flow of inquiry and meaning associated with dialogue allows new possibilities to emerge, and leads Schein (1993) to conclude, "dialogue thus becomes a central element of any model of organizational transformation" (p. 40).

Top-down Mandated Changes

Top-down mandated changes for educational reform have not worked (Carr, 1996; Cuban, 1990; Darling-Hammond, 1993, 1998; Fullan, 1991; Hargreaves & Evans, 1997; McLaughlin, 1987, 1990; Tyack & Tobin, 1994). Mandated policies have been based on,

teachers [being] expected to change their beliefs, knowledge, and actions as a result of a change process that consists primarily of issuance of a statement and the adoption of new regulations or curriculum packages. (Darling-Hammond, 1993, p. 756)

Although this approach is prominent in educational reform attempts, Darling-Hammond (1993) concludes that "policy implementation clearly cannot achieve the goals of reform" (p. 756).

Mandated reforms have failed because they exert undue stress upon the educators of the educational system (Fullan, 1991; Hargreaves and Evans, 1997), ignore teacher input (Allen and Glickman, 1998; Carr, 1996; Hargreaves and Evans, 1997), and fall short of developing the capacity and will for change among teachers (Fullan, 1991; McLaughlin, 1987).

Hargreaves and Evans (1997), in their discussion of educational change, refer to change imposed from the top as exerting stress on an already stressed system. They contend that it has intensified teachers' work, and they state that, "excessive stress, loss of control, and mechanical obedience provide no proper foundation for risk-taking, yet these have been the very effects of legislated reform" (p. 4).

Supporting this notion is Fullan's (1995) statement,

The presence of multiple, abstract reforms creates constant overload, fragmentation, and mystery. Even the most reform minded educators have difficulty figuring out what is meant by the latest fads as they burn out attempting to find coherence and meaning. (p. 230)

Hargreaves and Evans (1997) accuse educational reformers of ignoring the intellectual input of teachers while focusing too much on policies and procedures. While numerous reforms have dictated curriculum, assessment, and outcome measures, Hargreaves and Evans call these reforms anti-intellectual. Allen and Glickman (1998) believe changes in policies and procedures are not sufficient for educational reform. They believe, what goes on in the hearts and minds of the people in schools ultimately dictate successful school changes.

Similarly, Carr (1996) states, "imposing or suggesting solutions, or ways to get to the solutions, will by-pass the necessary collaboration with all stakeholders that will produce long-standing innovation and change" (p. 19).

Developing the capacity and will to embrace change is believed, by some educational researchers to be, "internal processes that the people who live and work in classrooms must undertake" (Earl & LeMathieu, 1997, p. 158); it is not something that can be imposed or mandated on people. McLaughlin (1987) emphasizes that the lack of teacher participation in the conception and implementation of educational reform efforts has been a weakness of centrally mandated reforms, resulting in failed effects on change at the classroom level. As well, Fullan's (1991) discussion of failed implementation focuses on teachers as the central element in reform. He states that during the implementation of numerous reforms, "many attempts at policy and program change have concentrated on product development legislation, and other on-paper change" and have ignored the fact that "what people did and did not do was the crucial variable" (p. 65). He emphasizes the quality of working relationships among teachers is strongly related to implementation. Referring to

the works of Goodlad (1984), Rosenholtz (1989), and Sarason (1982), Fullan (1991) emphasizes the social processes of open communication, collegiality, and learning on the job as important issues in implementation and reform.

Although it has been established that, telling schools to change has never worked to produce markedly different teaching over many decades of curriculum reform (Cuban, 1990; Darling-Hammond, 1998; Tyack & Tobin, 1994), it is just as important to realize that "school change cannot occur by school invention alone" (Darling-Hammond, 1998, p. 646). Fullan (1993) sums it up with the point that neither centralization or decentralization works and Darling-Hammond (1998) argues for "a more inclusive approach to policy that combines and integrates bottom-up and top-down approaches in a framework that will be more empowering for all" (p. 652).

In summary, "top-down initiatives ... [have] failed to come anywhere near to meeting the expectations of those who sponsored the legislation" (Bell, 1993, p. 594). While unidirectional, mandated reforms may be relatively easy to devise and dictate, "research indicates that change efforts, when treated as established programs and not unfolding processes, almost always fail" (Redding & Catalanello, 1992, p. 51).

Replacing the policy approach commonly associated with educational reform requires a fresh look. Knowing that previous legislated reform has not worked to enact significant educational development, educational reformers could benefit from the collective contribution of stakeholders facilitated through dialogue. Dialogue, as demonstrated by Bohm (1990), Isaacs (1993), Schein (1993), and Senge, (1990), develops collective, conscious, mindfulness. The broad, collaborative thought so needed to develop and implement reforms appropriate and acceptable to those who have to implement them, is best formalized through dialogue.

Dialogue to Overcome Top-down Mandated Changes

Mental models (Senge, 1990), or tacit theories (Argyris, 1990), are significant in today's business organizations and educational systems. Senge (1990) describes mental models as "deeply engrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action" (p. 8). An individual's perceptions and values mould how one sees the world, the work environment, and the tasks at hand. According to Argyris (1990), the tacit

theories that one person holds might be very different from the images held by his or her colleague, and the tacit theories that are put into use are often different from those espoused.

Additionally, people tend to defend these images, particularly under conditions of threat or embarrassment. Argyris (1990) labels this guardedness, defensive routines. Argyris suggests that individuals often build up defensive routines, or habitual ways of interacting that protect themselves and others from threat and embarrassment. Similarly, Kofman and Senge (1995) emphasize that defensive routines inhibit evaluation of mental models. They state,

Many of us have developed defenses that have become second nature - like working out our problems in isolation, always displaying our best face in public, and never saying "I don't know". The price we pay is enormous. In fact, we become masters of what Chris Argyris calls "skilled incompetence", skilful at protecting ourselves from the threat and pain that come with learning, but also remaining incompetent and blinded to our incompetence. (p. 20)

Often, mental models inhibit one from doing better, and

should, therefore, be constantly examined, something which is lacking in the educational system.

The discipline of working with mental models starts with turning the mirror inward; learning to unearth our internal pictures of the world, to bring them to the surface and hold them rigorously to scrutiny. (Senge, 1990, p. 9)

For example, the deep-seated individualism, isolation, and privatism associated with teaching often limits the type of dialogic conversation and mental model evaluation so necessary for progress. Darling-Hammond (1993) not only thinks that collaborative conversation is lacking in schools, but also thinks that some topics are implicitly believed to be a quagmire and are consequently never discussed. She states, schools today largely function by submerging talk about things that are likely to be most controversial - and thus are likely to be most important. Debates about the most fundamental concerns of teaching and learning are typically squashed - or tacitly agreed to be out of line. (p. 760)

On a broader scale within the educational system, the tacit theories held by educational policy makers, reformers,

and administrators, may be very different from those held by teachers. The result is the development of initiatives by policy makers that may conflict with the mental models of teachers at the school level who are responsible to implement the reforms. As summed up by Jenlink and Carr (1996),

school change often meets strong resistance from individuals unwilling to relinquish their absolute belief in certain truths about curriculum, learning, administration, etc. Individuals see their truths as the only truths, and subsequently see any attempt at educational or school change as a personal attack on their understanding of the school world. (p. 32)

What is required is dialogue, the mode of interaction that encourages the development of a collective mindset, with the potential to develop a common, acceptable approach to educational reform which will address the issues. The theory of dialogue,

is based on the premise that the tacit forces that guide the ways people think and act are fragmented and incoherent, and that this ground and its influence are largely invisible to human beings. Dialogue creates special environments in which people can perceive,

inquire into, and shift these underlying patterns of influence, and create entirely new kinds of individual and collective minds. (Isaacs, 1996, p. 21)

Dialogue relates to managing mental models and developing a collective mindset for organizational development and change.

In addition to dialogue being an open, face-to-face form of communication (Bennett & Brown, 1995), it is also a reflective process. Schein (1993) so strongly believes in focusing on our own thinking process, and delving into self-analysis to understand one's assumptions, that he concludes, "we have to learn to listen to ourselves before we can really understand others" (p. 46). It is believed that if individuals can reflect, acknowledge, and explore their own thinking, and then be open to share and explore the thought patterns of others, individuals in groups "will think better, collectively, and communicate better" (Schein, 1993, p. 43). As emphasized by Bohm (1990), the important point of collective thought developed through dialogue is "not the particular opinions [of participants]", but rather "the opening up of the mind and looking at all the opinions" (p. 39). Discovery, understanding, and learning at both the individual and group levels, are at the foundation of

educational change. Dialogue presents an opportunity to accomplish this.

A collectively developed, shared meaning, so needed across the educational system can be formulated through dialogue. It is from listening to ourselves to reformulate our mental models, and listening to others to develop common mental models, that the theory of dialogue builds shared meaning (Isaacs, 1993; Schein 1993). Shared meaning in education is best established when educators are willing to suspend assumptions, listen to others, and discover the meaning and understanding behind opinions and assumptions, without passing judgement. "When participants are unwilling to suspend their assumptions or their judgement of others' beliefs, the result is a closed mind to change" (Jenlink & Carr, 1996, p. 32). It is ineffective for policy makers to make assumptions or regulations that, when placed in front of teachers, are met with resistance and apathy. It would be more effective if policy was developed through dialogue in consultation with teachers.

Educational change can be negatively impacted if all stakeholders of education do not participate in the process. Openness and sharing, "is an opportunity for learning how

thoughts and feelings weave together, both collectively and individually" (Banathy, 1996, p. 39). Dialogue is an opportunity for policy makers, administrators, and teachers to weave a collective coordinated approach to educational change; an approach that is developed by and acceptable to both the policy makers and the implementers of change.

What is needed is a way for these groups to develop common ground. This would negate the assumptions and the familiar norms of action in schools, and avoid the collision of very different mental models held by policy makers, administrators, and teachers. As Senge, Kleiner, Roberts, Ross, and Smith (1994) summarize, "dialogue would kindle a new mode of paying attention to ... the assumptions taken for granted, the polarization of opinions, the rules for acceptable and unacceptable behaviour, and methods for managing differences" (p. 359).

Hargreaves (1995) points out that "policy is best established by communities of people, within and across schools, who talk about the provisions, inquire into them, and reformulate them" (p. 16). As suggested by Darling-Hammond (1993, p. 761), "the new model of school reform must seek to develop communities of learning grounded in communities of

democratic discourse". Dialogue, characterized by the open, face-to-face, reflective processes in which participants listen to others, while revealing and evaluating their mental models, is the democratic discourse needed to address the fragmented mindset and approach of previous reform efforts.

Dialogue thus helps initiate and maintain reform. Stata (1989) in his discussion of organizational change, states, "change is blocked unless all the major decision makers learn together, come to share beliefs and goals, and ... take the actions necessary for change" (p. 64). Dialogue empowers educational organizations and communities "to create the sorts of human educational systems that reflect their needs" (Carr, 1996, p. 19). Educational reform based on dialogue presents the stakeholders of reform with the mode of interface necessary to set the direction for change.

Complex Problems

Complexity is a normal state of affairs in contemporary organizations (Fink & Stoll, 1998; Fullan 1991; Hargreaves, 1998; Hargreaves, Lieberman, Fullan, & Hopkins, 1998; Senge, 1990; Smith, 1995). Adding to the multi-dimensional nature of complexity is something Senge (1990) refers to as "dynamic

complexity". Dynamic complexity relates to the difficulty of tracing cause and effect when the consequences of actions may not become evident until they are far removed in time.

In addition, Kofman and Senge (1995), point out that while many of the challenges organizations face today are complex and systemic, fragmentation is prominent. They believe that organizational members tend to fragment problems into pieces, study each component in isolation, and then synthesize the components back into the whole and hope that the problem is solved. "The pursuit of simple answers to complex issues" (Senge, 1990, p. 185), or the quick fix, rarely work in organizational settings. Senge asserts that rarely are problems so straightforward that a hastily arrived upon course of action will address the issue in any long-term manner. Kline and Saunders (1993) agree,

Most of the time when something goes wrong, we run off in pursuit of the elusive quick fix. Because so many quick fixes really do work at least temporarily for specific problems, we tend to ignore what is still going on under the surface - and may return to haunt us - after the quick fix has been applied. (p. 209)

Addressing the immediate problem with a quick fix

solution resulting from very little thought or deliberation is ineffective. Senge (1990) and others maintain that organizational learning would be better served if the underlying organizational structures responsible for the problems were examined to make more realistic, long term decisions regarding the issues.

Seivert, Pattakos, Reed, and Cavaleri (1996) agree that, "our fragmentation and insistence on separateness is responsible for our inability to solve systemic and organizational problems" (p. 368). Bawden (1991), in a discussion of a systemic way of thinking asserts,

if we want to deal with complexity then we have to develop ways of seeing the world in all its' complexity.... We have to develop ways of finding out about the mass of inter-relationships which exist between the different components of systems, as well as find out about the components themselves. (p. 18)

Several researchers suggest the complexity that exists in the educational system has been a factor in failed attempts at reform. Fullan (1991) points out change is multi-dimensional, with schools having to manage, coordinate, and integrate numerous changes all at once. Hargreaves (1998), as well,

illustrates that schools engaged in educational change and improvement do not have the luxury of focusing on a singular goal in a step-by-step, linear process. "Change today does not proceed through clear discrete stages of awareness, initiation, implementation, and institutionalization. It is much more messy than that" (p. 283).

Sarason (1990), as well, addresses the issue of failed reform, which he says is predictable. He points out the different components of educational reform have neither been conceived nor addressed as a whole, in their relationships, as a complex system. He believes, for example, if curriculum change, decision making, professional development, and new teaching strategies are tackled in isolation while others are left unchanged, educational reform is destined to fail. This is supported by Carr (1996) in her statement,

Changing a system without paying attention to the larger system of which it is a part, or the smaller systems of which it is made up, has been a key problem with reform efforts of the past decade. (p. 18)

Despite numerous innovations, and much deliberation, not much has changed in the educational reform field. Fullan (1993) concludes that the problems within the educational

system are "complex and intractable" (p. 46), and solutions are difficult to conceive and put into practice. Sarason (1990) supports Fullan's assessment of reform failure. He, as well, emphasizes that the nature of schooling and the educational process are intractable and problems are obstinate.

An approach to reform has to be more encompassing than the isolated, single-dimensional approach so common in previous attempts at educational change. To develop a coordinated understanding of the problems in a complex, non-linear system and overcome the obstacles to make a substantial change, Schein (1993) believes that "we need ways of improving our thought processes, especially in groups where the solution depends on people reaching at least a common formulation of the problem" (p. 40).

Dialogue to Overcome Complex Problems

Choosing appropriate reform initiatives is clearly a major challenge for many schools and school districts. Fink and Stoll (1998) maintain,

Until reformers and their academic advisors begin to look

at school change in more ecological, holistic ways and recognize that schools are complex, non-linear organizations and that teachers can and should be professional partners in school improvement, then contemporary reform efforts will predictably wither and disappear, as many have in the past. (p. 309)

Similarly, Sarason (1995) states, "changing one aspect of the education system is extraordinarily difficult, both conceptually and practically. Deal with one aspect only, and you quickly confront local and systemwide barriers to change" (p. 84). The quick fix solutions implemented in isolation from other parts of the system are destined to be problematic.

Ideally, an interactive, collective, holistic approach to assess the dynamics of educational problems and potential long-term solutions is called for within the educational system. The ability to analyze complex problems from all angles, and make adjustments as appropriate, is an asset associated with progressive learning within organizations. Dialogue is the foundation to address complex problems in a holistic fashion.

Described by Senge (1990) and Bohm (1990), dialogue relates to viewing complex problems in their wholeness.

Through reflective, open, face-to-face dialogue, organizational members can explore issues from many points of view and be more insightful than they can be individually. "In dialogue, there is a free and creative exploration of complex and subtle issues, a deep "listening" to one another and suspending of one's own views" (Senge, 1990, p. 237).

Evers (1994) points out one innovation has followed another with little or no emphasis on the whole picture, or the integration of different approaches. He suggests that all groups need to work together to resolve fragmentation, and educational change should be based on dialogue incorporating all of the stakeholders of reform. If educators are to succeed in their reform efforts, they must "promote dialogue between parents, bureaucrats, administrators, teachers, students, and government leaders. Schools which fail to open dialogue will find themselves giving in more and more to pressure groups" (Evers, 1994, p. 492). Evers sees the need to work on this as a community, in dialogue, for fundamental change and development.

The fragmentation of ideas associated with the multi-layered mental models of teachers, administrators, and district personnel has to be addressed if we expect

significant implementation of successful reforms. Schein (1993) believes that in the process of dialogue, "we build a common experience base that allows us to learn collectively" (p. 47).

Dialogue incorporates the integration of multiple perspectives. It is an "opening up" type of conversation (Senge, 1990, p. 248), in which participants seek a picture of events, larger than any one person's point of view. In the educational system, it is the processes of dialogue that would give the teachers and administrators an opportunity to view the larger reality. Dialogue would help to develop initiatives consistent with the collective view to positively impact education. If all participants were involved in the process, the collective initiatives would more likely be accepted and implemented.

Dialogue is an opportunity for educators to implement and integrate systemic reforms, as opposed to the isolated reforms characteristic of previous attempts at educational change. Dixon (1994), in her discussion of organizational learning, states that organizational learning involves "collective rather than only individual interpretation of information" (p. 6), and points out that processes to

facilitate collective interpretation of information are of paramount importance. She highlights dialogue as one of four important conditions that enhance the collective interpretation of information within organizations stating that, "organizational dialogue is interaction in a collective setting that results in mutual learning" (p. 83). Schein (1993) summarizes the purpose of dialogue in his statement, "dialogue aims to build a group that can think generatively, creatively, and most important, together" (p. 43).

Dialogue relates to the concept of coherence. Senge (1990) argues for alignment and coherence among organizational members to increase capacity. Senge (1990) believes that unless members are functioning as a cohesive unit, then "individuals may work extraordinarily hard, but their efforts do not translate into group effort" (p. 234). In discussing coherence at the school level, Fullan (1995) states, "it is only when greater clarity and coherence is achieved in the minds of the majority of teachers that we have any chance of success" (p. 234).

On a broader scale, to include school and district administrators, coherence is lacking since everyone has conflicting mental models which leads to ineffective attempts

at change. Dialogue is at the root of developing coherent mental models in education, since dialogue provides the venue to expose, articulate, and improve one's mental models for greater collaboration in a group setting. To Bohm (1990), dialogue enables groups to "share meanings" (p. 16) so that all of the various meanings come together and the larger group can "work toward coherence" (p. 16).

"Dialogues are diverging; [providing] a richer grasp of complex issues" (Senge, 1990, p. 247). Dialogue provides the opportunity to explore the fragmentation of thought to develop a collective entity. Applied to the educational system, dialogue can reduce the isolated, fragmented thought amongst educators, and enhance the pool of common meaning for effective educational reform.

School Culture

Culture has been defined by Schein (1992, 1996), as a set of basic tacit assumptions about how the world is and ought to be that a group of people share and that determine their perceptions, thoughts, feelings, and to some degree, their overt behaviour. Within the educational community, it is

recognized that "teacher cultures, the relationships between teachers and their colleagues, are among the most educationally significant aspects of teachers' lives and work" (Hargreaves, 1994, p. 165). Teacher cultures provide a vital context for teacher development and learning. For example, the learning enriched schools, compared to the learning impoverished schools, as described by Rosenholtz (1989), provide powerful models of work environments that stimulate and support continuous improvement.

Despite what is known about the potentially positive influence of culture, two kinds of cultures have traditionally prevailed among teachers; the culture of individualism, where teachers have worked largely in isolation, being sociable with their colleagues, but sharing few resources and ideas (Hargreaves, 1994; Little, 1990), and balkanized cultures where teachers have worked in self-contained subgroups, like subject departments, that are relatively isolated from one another (Hargreaves, 1994). Both individualism and balkanization make it hard for teachers to build on one another's expertise.

School culture presents a stabilizing force in school, disallowing radical change (Quartz, 1995; Sergiovanni, 1998).

For example, Sergiovanni (1998) states,

the tendency for a school to remain stable is attributed to the network of assumptions, beliefs, regularities, and traditions that comprise norms which define, and then provide meaning for teachers. These collective meanings help teachers make sense of their existing practices, affirm their sense of purpose, and help them to rationally accept the social situations they experience in schools. (p. 577)

Fragmented school cultures are tenacious and offer substantial resistance to change (Ball, 1987; Fullan, 1991; McCulloch, 1998; Rosenholtz, 1989; and Schein, 1992). Fullan (1991) emphasizes that the powers reinforcing the status quo are systemic. Similarly, McCulloch (1998) states, "cultures of schooling have proven to be highly resilient to fundamental change, and what has appeared to be novel in principle or policy has commonly been interpreted in practice along familiar lines" (p. 1203).

While school cultures can be obstinate, and have negated or marginalized reform efforts, Fullan (1991) believes that the culture of the school has to be addressed to develop the long-term capacity for continuous improvement. He states,

"deeper changes in the very culture of the school ... are at stake if we are to develop this capacity for improvement" (p. 90). Similarly, Sergiovanni (1998) believes that the root of change in relationships, teaching practice, and student learning involve changes in school culture.

Pullan (1993) believes that effective reform would change the norms, habits, skills, and beliefs of educators such that it would enhance the teaching and learning process. Failing to develop the culture of teaching toward greater collaborative relationships among students, teachers, and others, results in unsuccessful reform efforts. In summary,

the educational system (and traditional schools) is a series of closed containers - classrooms, schools, central office fiefdoms (which is what we mean by the egg crate or cellular model) - all of which are surrounded by competing special interests. Change requires a dynamic, open, self-examining, interactive system. (Donahoe, 1993, p. 301)

Despite the cultural dimension so evident in schools, schools interested in organizational learning and development must address the communication barriers resulting from the cultural orientation. Collaborative, interactive relations

established "through the gradual creation of a shared set of meanings" (Schein, 1993, p. 43) associated with dialogue, offers stakeholders of education the process to enhance cross-cultural communication and organizational learning.

Dialogue to Overcome School Culture that Impedes Learning

Gaining coherence in the educational system has been difficult since complex organizations, including schools, are characterized by culture (Schein, 1993), and by subcultures (Hodgetts, Luthans, & Lee, 1994; Kofman & Senge, 1995; and Schein, 1993). Hodgetts et al. (1994) for example state, every complex organization has a variety of subcultures - departments, divisions, levels of management, and the like. Each has its own special interests, mental models of how the business works, and quite possibly its own language (jargon). (p. 13)

Similarly, Fink and Stoll (1998) note that schools are characterized by subcultures: "different departments often have different goals, communication networks, and educational purposes" (p. 312). These subcultures result in "fragmentation" (Kofman & Senge, 1995) which "results in

'walls or chimneys' that separate different functions into independent and often warring fiefdoms" (p. 8). The end result is a subcultural communication network which can be hard to change, or poor communications between subcultures when initiatives need to be developed and implemented. Both situations present an obstacle to change and the fragmented subcultures of schools determine whether changes are implemented or not.

Departmental subcultures and the cultures of individualism and balkanization, so characteristic of schools, "fragment professional relationships, making it hard for teachers to build on one another's expertise" (Hargreaves, 1995, p. 16). Hargreaves (1997) points out that, "a central task in creating cultures of educational change is how to develop more collaborative working relationships between principals and teachers, and among teachers themselves" (p. 2). Similarly, Sergiovanni (1998) states "before school culture can change, meanings that are both collective and individually held, must change" (p. 577). He goes on to state,

changing a culture requires that people, both
individually and collectively, move from something

familiar and important into empty space. And then once they are in this empty space, to build a new set of meanings - a new set of norms, a new cultural order to fill it up. Deep change, in other words, requires the reconstructing of existing individual and collective mindscapes of practice. Mindscapes are implicit mental frames through which the reality of schooling and our place in it are envisioned. (p. 577)

The movement of educators into empty space, both individually and collectively, to change mindscapes (Sergiovanni, 1998), or mental models (Argyris, 1990; Isaacs, 1993) can be facilitated through dialogue. According to Schein (1993), Isaacs (1993), Roth (1996), and Senge (1990), dialogue offers individuals and groups the opportunity to surface, test, and improve their mental models within a trusting environment. For example, Roth states, "learning on a collective or systems level can take place only when theories that actually guide behaviour are articulated" (p. 243). Such articulation in hierarchical organizations is often distorted because it leads to debate or discussion. Murphy (1995) summarizes,

My observations in business, political, and social

settings is that people spend an inordinate amount of energy asserting and debating which position is right or wrong. Such thinking is not only destructive but also flawed. ... The important question, however, is not whether something is right or wrong, but is it helpful for the purpose at hand. Such a small shift in thinking could greatly ease the way to creating a much more productive and much more human world. It would certainly go a long way towards removing some of the more serious barriers to learning and to creating learning organizations. (p. 205)

Isaacs (1996) and Schein (1993) are proponents of dialogue, as the type of productive conversation needed to make cultural change. Isaacs proposes, "dialogue is a unique form of conversation with potential to improve collective inquiry processes, to produce coordinated action among collectives, and to bring about genuine social change" (p. 20). Dialogue has application in education and offers the opportunity for educators to communicate across the cultural boundaries evident within the schools and the educational system at large.

Enhanced communication to develop collaborative working

relationships is essential to bring about the social change required for educational reform. Dialogue is an opportunity for the policy makers, school administrators, and teachers to engage in open, face-to-face communication (Bennett & Brown, 1995) in an effort to co-create educational reform. Shared meaning through suspending assumptions, listening to one another, and developing common mental models has potential to increase the collective power of the group (Bohm, 1990; Schein, 1993). Schein (1993) sums it up as follows,

As we listen to ourselves and others ... we begin to see the bias and subtleties of how each member thinks and expresses meanings. In this process, we do not convince each other, but build a common experience base that allows us to learn collectively. The more the group has achieved such collective understanding, the easier it becomes to reach a decision, and the more likely it will be that the decision will be implemented in the way that the group meant it. (p. 47)

Dialogue facilitates communication across the sub-cultural barriers of schools. Through dialogue "participants become aware of the diversity of assumptions and how these differing assumptions often come into conflict, resulting in

fragmentation and a break down of the group's thinking" (Jenlink & Carr, 1996, p. 33). Thus, dialogue helps to create, develop, and sustain collective thought to overcome the sub-cultural limitations to school change.

Conclusion

The past four decades have been an era of educational reform without the anticipated success (Bell, 1993; Day, 1997; Fullan, 1991, 1993; Hargreaves 1997; Hargreaves, Lieberman, Fullan & Hopkins, 1998; McCulloch, 1998; Sarason, 1990; Stoll & Fink, 1996). Hargreaves (1997) states that "even with this impressive knowledge base and expertise about the factors that can enhance or undermine educational change, too many changes remain disappointing and ineffective" (p. viii). Fullan (1991) summarizes the lack of progress in educational reform as follows: "Neglect ... of how people actually experience change as distinct from how it was intended - is at the heart of the spectacular lack of success of most social reform" (p. 4).

Educational reformers must recognize that mental models and fragmentation exist within the educational system.

Mandated reforms created at one level of the educational system and placed in the laps of those at another level, fall short of making significant gains in educational reform (Carr, 1996; Darling-Hammond, 1993; Fullan, 1991; Hargreaves, & Evans, 1997). Similarly, problems tackled in isolation without accounting for the complexity of the system and the cultures of schools will yield less than intended results (Fink & Stoll, 1998; Hargreaves, 1994; Hargreaves, Lieberman, Fullan, & Hopkins, 1998; Sergiovanni, 1998; Smith, 1995). All of these problems point to dialogue as the foundation for change. Isaacs (1996) states, "dialogue appears to be a powerful way of harnessing the inherent self-organizing collective intelligence of groups of people and of broadening and deepening the collective inquiry process" (p. 21).

Dialogue, with its' basis in listening to one another, reflecting on assumptions, altering mental models as appropriate, and developing a collective, generative, creative pool of common meaning, provides the environment for the stakeholders of educational reform to tackle the issues. Through dialogue, the reforms necessary for a progressive educational system are more likely to be envisioned and implemented, because "dialogue does indeed carry enormous

transformative power for groups of people" (Isaacs, 1996, p.29).

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Folio Conclusion

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School and School systems are organizations. Educators attempting to reform the education system may benefit from keeping abreast of business literature to identify what is current and effective for organizational change. If reformers are to understand the leverage points of change, an understanding of the adaptive and generative nature of organizational learning, and the individual, group and organization components of organizational learning is necessary.

Educational reformers must recognize that mental models play a significant role in any organization. Fragmentation within organizations is prominent as everyone has different and competing mental models and these mental models vary across divisions and levels of organizations. Developing shared mental models is considered by many to be an essential link between multiple levels of the organization if organizational learning is to occur. In addition, shared mental models have been proposed as increasing team effectiveness and departmental communication. As Schein (1993) states, "any form of organizational learning ... will

require the evolution of shared mental models that can cut across the subcultures of the organization" (p. 40).

Developing shared mental models, "conscious collective mindfulness" (Isaacs, 1993, p. 31), is best formalized through dialogue. Common in organizations is the over use of the less effective forms of discourse, debate and discussion. Unlike these, dialogue is a community-building form of conversation whereby individuals, within a trusting environment, provide input which is then validated.

It has been substantiated that "action to bring about educational change usually exceeds people's understanding of how to do so effectively" (Hargreaves, Lieberman, Fullan, & Hopkins, 1998, p. 1). Educational reformers, who have superimposed arms-length reform initiatives upon the educational system, may obtain a more systematic, inclusive, and fundamental change in the system through dialogue. While dialogue alone is not sufficient to bring about necessary reforms in education at the classroom level, it is essential to organizational learning. And only through such learning will essential change occur.



