

# **Leadership Development and Constructivism**

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## **Executive Summary**

The Canadian Armed Forces face a future that is very different from the past. As the environment becomes increasingly complex, the military faces the challenge of developing leaders equipped who can think critically and deal with unpredictable and ambiguous organizational problems. This paper addresses the criticism of contemporary leadership literature that leadership development research is not sufficiently grounded in learning theories. The contribution that the constructivist perspective can make to the understanding the underlying principles of good leadership development interventions is extensively discussed.

## **Background**

Organizational leaders face a number of significant challenges as their jobs and the world around them become increasingly complex (Zaccaro & Klimoski, 2001). This is no less true for the armed forces. The Canadian Armed Forces face a future that is fundamentally different from the past (Officership, 2020). Over the past few years there have been sweeping changes that have had dramatic impact on the military operations. The end of the cold war and the emergence of the United States as the sole superpower signaled an end of immediate threat to Canadian interests and a change in the role of the Canadian military (Officership, 2020). Military operations are diverse and are not as clearly defined as they were for the traditional army, moreover, the very nature of an operation may change abruptly. The terrorist attacks on the US of September 11, 2001 also present unique challenges, and indicates that even the battle space can be unpredictable.

These factors and other trends have resulted in great concern with leadership within the Canadian Forces. Minister of National Defence, Arthur Eggleton, expressed this concern by stating that “the challenges that the CF face will be unpredictable, ambiguous and frequently dangerous, Canadian Forces officers of all ranks must be outstanding leaders to meet these challenges” (Officership, 2020). General Baril, Chief of Defense Staff mirrored this theme by articulating that CF leadership is constantly being confronted with complex, ambiguous and politically charged operations. He further indicated the direction of the military’s focus in dealing with the issue.

‘I am deeply committed to ensuring that the Canadian Armed Forces have the leadership they need to confront the challenges of the future with confidence.’<sup>1</sup>

In response to these uncertainties, the office of Special Advisor to the Chief of Defence Staff on Officer Professional Development was established. Officership 2020, a strategic document, was developed as a guide for charting the course towards outfitting the organization with the kind of leadership required to meet the challenges of the future (Wenck, 2002). Officership 2020 outlines a vision of leaders who possess the spirit and expertise to succeed in a wide range of operations. The document specifies the need for officers of high intellectual ability; who will think critically; will learn from experiences; and will boldly accept the risk and ambiguity inherent in the demands of the profession.

Based on the response of the Minister of Defence, it can be inferred that the military has made the fundamental assumption that leadership matters. This notion is well supported in the literature. Katz and Kahn (1978) advanced the argument that actions taken by leaders of organizations have profound implications for both organizational operations and broader patterns of social history. Empirical research findings also indicate that effective leadership denotes the difference in organizations’ ability to deal with the pressures of change (Mumford, O’ Connor, Clifton, Connelly, Zaccaro, 1993). Consequently, some perspectives of organizational leadership emphasize the connections between specific leader attributes and organizational effectiveness. This has resulted in a focus on identifying and developing the competencies associated with effective leadership.

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<sup>1</sup> Canadian Officership in the 21<sup>st</sup> Century (Officership 2020) p 8

This paper will present an overview of the challenges faced by the armed forces, review the literature of organizational leadership, and discuss the implications for leader development within the complex environment of today's military. The paper will also examine the work of theorists within the fields of developmental psychology and education and attempt to interpret the leadership development process and practices within a constructivist framework.

### **Trends Confronting the Military**

In recognition of the impact of the operating environment on organizations, it is essential to review environmental changes and consider their impact on the military prior to any consideration of leadership competencies.

Unprecedented changes in the military organization have made leadership in the twenty-first century even more important and difficult than in the past. These changes range from internal organizational, to external, and include both technological and environmental changes (Yukl, 1999). Changes in technology, military roles, environment, and organizational arrangements all may have implications for challenge of military leadership. As the world becomes more of global village, the scope of national interests – and thus the range of military missions, both at home and abroad increases. These changes reduce the ecological value of rules, procedures, and detailed plans, and increase the value of effective unstructured problem solving skills (McGee, Jacobs, Kilcullan & Barber, 1999). The expansion of leadership roles and the complexity of the operating environment have resulted in corresponding complexities in the competencies required of leaders. The effective military leader needs to be proficient in technical

skills, interpersonal skills and cognitive skills such analytic ability, logical thinking, creativity, judgment, problem solving, forecasting, concept formation and theory construction. Yukl (1999) has concluded that as a result of these changes, more leadership skills are now needed for officers at middle and lower levels. Moreover, he contends that it will take longer to learn the required skills.

### *Changing Missions*

In addition to the number of diverse missions undertaken by the military, the possibility of abrupt changes in missions presents additional challenges to the organization's leadership. The political direction of a mission may be changed unexpectedly and even inconsistently in response to such circumstances as changes in domestic policies of a major troop-contributing state. The preference of military leaders for clear and decisive direction from which they may develop a mission-appropriate strategy is unlikely to be met (Gurstein, 1999). This will result in military leaders in the field making decisions not previously expected of them.

### *New Technology*

The idea that advances in technology demand that leaders be critical thinkers is well supported in the literature. Yukl (1999) agreed that new technology is changing the nature of warfare and that these changes have important implications for the activities and skills of army leaders. The development in technology and changes in necessary workplace skills have made the ability to think critically more important than ever before (Halpern, 1998). Additionally improved communication systems and information

technology has made it possible to provide more detailed, timely information to officers who need it. However, increased information can easily result in information overload. Leaders will be faced with the problem of what to do with the deluge of data that is available. Leaders will need strong cognitive skills to deal with the flood of information and make sense out of it. Information has to be selected, interpreted, digested, and evaluated. If individuals cannot think intelligently about the myriad of issues that confront them, then they are in danger of having all the answers without knowing what the answers mean. Halpern (1998) also asserted that the abilities of knowing how to learn, and knowing how to think clearly about the rapidly proliferating of information with which they will be required to process, will provide the best education for individuals.

In detailing the competencies of officers of the future, the CF examined how these trends have impacted on the skill requirements of military officer. The challenge, as described by the CF, is to develop the leadership capacity of the forces to deal with unforeseen challenges. Among its objectives, Officership 2020 identifies enhanced decision-making skills and openness to experience as two competencies officers need in order to be able to manage operations that can be characterized as increasingly ambiguous and uncertain. The emphasis on cognitive skills for the CF is warranted: Numerous studies support the idea that the key to dealing with the complexity and uncertainty of the operating environment lies in the development of leaders possessing complex cognitive skills (Hooijberg, Hunt, & Dodge, 1997).

This conclusion provides a rationale for the focus on the development of critical thinking skills in organizational leaders. Critical thinking skills are particular sets of



metacognitive abilities that are developed over time given the appropriate educational experiences and opportunities for practice. Although many training programs do not presently specifically address the development of critical thinking, it is an ability that can be developed through training coupled with opportunities for application within authentic situations and feedback (Riedel, 2003).

It is recognized that it is no longer sufficient for leaders to merely learn a set of skills to be utilized in engagement. Rote behavioral training will not provide a fully sufficient basis for leadership success (Mumford, Zaccaro, Harding, Fleishman, & Reiter-Palmon, 1993). The ability to think through a problem, rather than only apply previously learned solutions and procedures, is crucial to the military success (Riedel, 2003).

Military officers are often required to operate in situations that they may not have previously encountered and for which they have not been trained. The media provides example of troops fighting terrorism in Afghanistan and Iraq, performing peace keeping operations in Bosnia, and working with team members of other nationalities who have different ways of approaching problems.

Leaders are expected to be responsive to the external environment if they are to be successful in meeting organizational goals. Continuous change demands continuous reflection and learning. Leaders cannot be effective if they do not recognize and understand the changes and learn to respond to the changes. Leaders must be trained not only to think, but also to think about their own thinking – to reflect on their behaviors. Leadership programs must necessarily focus on the development of general schema and basic characteristics that contribute to effective performance in a number of different situations.

The literature reveals that one essential competency for coping with increasing complexity is the ability to learn from experience, including the individual's earlier life experiences as well as more recent job-related experiences (Yukl, 1999). A key aspect of learning from experience is to introspectively analyze one's own cognitive processes and find ways to improve them (Argyris, 1999). Cognitive complexity is required to develop better mental models for interpreting feedback (Yukl 1999). This competency, also referred to as 'self learning', appears to involve a combination of cognitive complexity, emotional maturity, and flexibility.

The rapid changes in the environment have resulted in corresponding changes in leadership requisite skills, with a focus on the development of cognitive skills. This focus should not be translated as a decrease in the importance of other skills. Yukl (1999) maintained that effective military leaders need to be proficient in technical skills such as knowledge of tactics, doctrine, operational procedures, and functional areas. Capable leaders are also required to possess interpersonal skills such as empathy and social sensitivities in order to operate successfully in overseas deployment assignments. Interpersonal skills are of special importance for military leaders as they will be directing a more diverse military force and will be working more closely with parties over whom they do not have command authority. Additionally, the ability to communicate clearly and persuasively is also important as the military operates under the eyes of a watchful press.

## **Leadership Defined**

Leadership has been defined as a process of giving purpose, meaningful direction to collective effort, and causing willing effort to be expanded to achieve purpose (Jacobs & Jaques 1990). Leadership scholars have interpreted the emphasis of giving purpose and meaningful direction as a process that includes the specification of problems and discretion of choices (Zaccaro, 2001). The definition has given support for a functional approach to leadership. This perspective emphasizes the importance of leaders to accomplishment of organizational goals. This view of leadership endorses the notion that effective leadership behavior fundamentally depends on the leader's ability to solve organizational problems, which is in part determined by the role occupied by the leader within the organization (Mumford, Zaccaro, Harding, Jacobs, & Fleishman 2000). Although leaders are expected to influence others in goal attainment, this view highlights the significant of leaders being capable individuals.

Katz and Kahn (1978) supported the view that leaders are expected to solve problems and influence others in the pursuit of organizational goals. While a leader's behavior is dictated by the needs of the situation, a leader must perform in a manner that brings about the realization of organizational goals. Thus, leadership development becomes an issue of developing performance capacities for a certain kind of social role (Mumford et al., 1993b). Feldman and Lindell (1989) also endorse this functional approach to leadership; they argued that leadership behavior is a complex, opportunistic, social problem syndrome that involves many cognitive capacities in the generation, selection, and implementation of influence attempts as well as social decision biases.

This characterization of leadership behavior indicates a number of processes that should be indicative of effective organizational leaders. Included among these processes are problem construction and solution generation, which include the processes and behaviors of information acquisition and organization, the specification of group and organizational needs, and the planning and development of strategic responses (Mumford, et al., 1993a). These processes frequently occur in domains where problems are likely to be highly variable in demand characteristics, and are also likely to require relatively novel approaches. This suggests a need for controlled processing in leadership that places a premium on intelligence, creativity, and constructive skills that increases problem variability and complexity (Jacobs & Jaques, 1987). Mumford, et al., (1993a) further, contended that problem novelty requires creative processes and skills related to problem definition and idea fluency.

These findings indicate that short behavioral training cannot equip leaders for the challenges they will face. Mumford, Zaccaro, Harding, Fleishman & Reiter-Palmon, (1993) argued that the conditions of task performance change from time to time and from situation to situation and therefore leaders cannot rely on a set of preset rules or behavioral practices for predetermined circumstances. Leadership development has to focus on the development of broad general schema and principal-based learning to facilitate transfer of learning to relevant situations.

The existence of the relationship between the role of leaders in the organization and the ability of the organization to meet its goal suggests that a role-based, human performance approach to understanding organizational leadership may provide a strong foundation for methodical leadership development efforts (Mumford, et al., 1993b). This

perspective integrates two competing paradigms of leadership theory; trait theory and situational theories. This is a unique analysis in the sense that while it accepts the importance of individual characteristics in leadership, it also endorses the notion that the ability to accomplish group goals also depends on the situation. Additionally, another point of departure from trait theory is the fundamental assumption that leadership is a skill that can be developed. Moreover, it advances the notion that these capacities can be developed in a way that prepares leaders to be able to respond in significantly different ways to correspondingly different situational requirements (Zaccaro, Gilbert, Thor & Mumford, 1991).

### **Organizational Leadership**

The organization, conceptualized as an open system, has been widely accepted in leadership studies (Katz & Kahn, 1978). This theory proposes that the organization is an entity that impacts upon its environment. Organizations are viewed as purposeful, goal-oriented entities that are guided by the demands of the environment (Mumford, et al., 1993b). To reduce the complexity caused by the environment upon goal attainment, organizations evolved into hierarchical structures with leadership roles for specific goal attainment.

Leadership development is an implied focus of the role-based approach to leadership. The role-based approach to leadership articulates the contribution of the leader's role requirement to the leader's behavior. Mumford et al. (1993b) asserted that any identification of competencies must proceed from a theoretical framework that considers the nature of organizations. Although many theories of leadership in the

psychological literature are largely context free, Zaccaro and Klimoski (2001) contended that leadership must be studied within the organizational context with consideration given to organizational structure. Such a view would recognize that leadership behavior is influenced by organizational level and the differentiation in role, as a result of the leader's place within the organizational space. Not only do the fundamental demands and work requirements of leaders change at different levels (Jacobs & Jaques, 1987) but the hierarchical context has profound effects on the kind of choices that can be made. Thus, as performance demands of leaders change across organizational levels, there are corresponding changes in critical competencies and work requirements. The changes should provide important input into developmental interventions programs.

The nature of organizational structure suggests that the environment becomes increasingly complex, wherein higher levels of leadership are characterized by greater information processing demands, and by the need to solve more ill-defined, novel and complex organizational problems (Zaccaro, 2001). This idea establishes an argument for the need for a correspondence between the complexity of leaders' cognitive capacities and the operating environment. Two theoretical frameworks that emphasize this change are outlined below.

Jacobs and Jaques (1987) contended that leadership tasks at lower levels require more technical knowledge, and demand a great deal of face-to-face interaction. They argued that complexity is comparatively low, and a substantial set of rules and procedures are established to guide action. Mid-level tasks are described as more complex. Actions at this level may have indirect second and third order effects (Zaccaro, 2001). Tasks at this level necessarily place greater demand on the need for abstract thinking skills,

particularly analytic skills. Jacobs and Jaques (1987) further stipulated that strategic tasks at upper organizational levels are even more complex. The incumbents at the top level must understand the broad political, economic, sociocultural, technological, and informational environment.

Streufert and Swezey (1986) also offered several broad differences in complexity between lower and upper organizational levels. They maintain that an essential component of organizational complexity is information load. Information load concerns the amount of information flowing into the organization as well as the information exchanges among segments of the organization (Zaccaro, 2001). At the upper levels, there are more sources of information flow; therefore, more information must be differentiated and integrated by leaders at these levels.

The significance and value of these analyses of the qualitative difference in leadership along organizational levels, is the notion that leadership requirements differ across different hierarchical levels and that the “one size fits all” approach to leader development should be changed to account for differing cognitive requirements and capacities (Wong & Duran, 1999). As the complexity of the role requirements increases with organizational levels, there has to be a corresponding match with the requisite thinking skills of the leader.

Leaders are usually required to solve discretionary problems in ambiguous domains. The factor that changes over time is the increased complexity and abstractness of the target problems. Thus characteristics such as inductive reasoning, deductive reasoning, and written comprehension are always likely to contribute to leader performance (Mumford et al., 1993b). The specific contribution of certain kinds of

reasoning may change, however, such that deductive reasoning becomes more important at higher levels. Similarly, a degree of creative capacity will always be important in leadership; however, because higher-level leaders generate structure, plans, and objectives in response to more unique problems, creativity becomes progressively more important at these levels.

While the contribution of these leadership researchers (Katz & Kahn, 1987; Jacobs & Jaques, 1987; Streufert & Swezey, 1986) are valuable in recognizing that leadership roles and requisite competencies differ across organization level, it is also important to recognize the implication of the present trends on the functions specified by these authors. Although the general concept of increased complexity with respect role requirements is important, current trends suggest that role requirements must be revisited. There is need for empirical research to be conducted for the purpose of investigating role requirements of today's officers. Contemporary research suggests that lower organizational levels are characterized by a higher degree of complexity; hence there is a need for junior leaders to acquire the critical thinking skills required to make complex decisions. Wenek (2002) argued that as the environment becomes more complex, leaders at lower levels would need correspondingly complex conceptual capacities. This implies that junior officers will require skills that will permit confident decision-making and appropriate independent action in complicated scenarios. Decisions taken at the tactical level have the potential for strategic repercussions (Wenek, 2002). These arguments provide the rationale for an emphasis on the development of critical thinking skills in initial developmental programs. The potential implications of the decisions made at the



tactical level suggest that leaders have to be equipped with some level of thinking skill prior to assuming initial assignments.

### **Leadership Development**

Leadership development represents a specific case of adult development (Lerner, Freund, Stefanis, & Habermas, 2001); thus a systematic application of developmental principles should do much to facilitate leadership development. Leadership development can be envisioned as a progression of changes that can be traced to the adaptive demands made by interventions and the functional role requirements associated with the need for discretionary problem solving (Mumford et al., 1993b).

Changes in the nature of discretionary problem solving will necessitate development and refining of new conceptual skills while integrating the knowledge that provides the basis for problem solution. Furthermore, across their careers, leaders will be developing new competences that contribute to performance in discrete situations. Thus general adaptive characteristics such as openness to experience, cognitive complexity and metacognitive skills, that serve to promote skill development, are likely to prove of general long-term developmental significance.

Although potential conceptual capacity is fixed, it does mature over an individual's life span Jaques (1990). The development of this capacity proceeds slowly, with milestone occurring when individuals reach the limitations of their current constructed model of experience (Lewis and Jacobs 1992). When current models are insufficient, leaders will attempt to understand the more complex environment by developing new frames of reference that reflect higher levels of cognitive power.

The skill-based model of leader performance (Mumford, Zaccaro, and Connelly & Marks 2000) postulates an interaction between traits and experience. However, developed capacities are seen as having a more direct and immediate impact on leader performance than traits. This model emphasize three types of leadership skills, these include, complex problem solving skills, solution construction skills, and social judgment skill, within a body of knowledge or expertise in one or more domains.

The skill acquisition models advanced by Ackerman (1992) and Anderson (1993) provide suitable framework for the attainment of leadership skills. These models outlined three stages in the development of skills. In the first stage individuals acquire understanding of task performance requirements, and should be able to produce some approximation of the skill. The second stage is characterized by attempts to elaborate and integrate the skill. During this stage the learner practices to smooth out the performance of the skill. The final stage is characterized by automaticity of the skill.

Leaders no matter how gifted, enter the organization as novices (Mumford, Marks, Connelly, Zaccaro, Reiter-Palmon, 2000), hence, organizations are responsible for the development of their leaders. Lewis and Jacobs (1992) maintained that the heart of development should be the planned assignment of leaders to successively more challenging work roles. Organization should provide the kinds of experiences whereby potential leaders may acquire the necessary core concepts and an understanding of leadership within the organization's context. The skill acquisition models suggest that the kinds of experiences provided should be structured and supervised.

After socialization, the experiences that follow should allow for the elaboration of core knowledge and the opportunity for integration of real life experiences. Elaboration

is an integral part of the learning process. Elaboration is a process of thinking about new knowledge or skills and making connections to information or ideas already in the learner's mind. Reflection provides the basis for elaboration of knowledge and for the emergence of principle based knowledge structures. Reflection and practice result in the formation of principle based knowledge structures and the development of complex cognitive skills. Leadership development assignments where the leader has primary supervisory responsibility and some limited discretion is valuable in skill development. This would provide the opportunity for the leader to smooth out his or her performance, until ultimately he or she can perform the task without rehearsal.

The fields of cognitive development and educational philosophy and psychology have accumulated a plethora of research on the development of cognitive capabilities. These frameworks have the capacity to enhance the potential of leader development by outlining the underlying principles of successful leadership development practices. Appreciation of these underlying principles can be helpful to those charged with the responsibility of leadership development. Leadership research defines leadership development as the expansion of a person's capacity to be effective in leadership roles and processes (Van Velsor, McCauley, & Mosley, 1998).

The leadership literature stresses the importance of cognitive processes in leadership. A review of the leadership literature reveals a common emphasis on the development of cognitive complexity, the ability to solve problem, and the ability to learn from experience. According to Mumford et al. (2000a) leaders are required to define significant problems, gather information, formulate ideas and construct prototype plans for solving the problem within organizational context. They contend that expertise is

necessary in making these choices as well as certain cognitive control mechanisms such as those subsumed under the rubric of metacognitive skills. This view is also supported by Yukl (1999), who maintained that in order to adapt to increased complexity in the environment and the rapid pace of change, leaders at all level require strategic cognitive skills. An essential competency for coping with increasing complexity and change is the ability to learn from experience, and a key aspect of learning from experience is to introspectively analyze one's own cognitive processes (the way one defines and solve problems) and find ways to improve them.

## **The Role of Constructivism in Leader Development**

The works educational philosopher John Dewey, developmental psychologists, Jean Piaget, Lev Vygotsky, and educational psychologist, Robert Gagne, Jerome Bruner and others can quite easily accommodate the research done on leader development. Although the works of these scholars are distinctive in emphasis, they converge on the axiom that humans construct their own knowledge.

The constructivist perspective is a collection of theories rooted in cognitive and developmental psychology. Constructivism is a philosophy of learning founded on the premise that, by reflecting on experiences, individuals construct an understanding of their reality (Woolfolk, 2004). Most people use the term emphasize the learner's contribution to meaning and learning through both individual and social activity (Slavin, 2000)

According to the constructivist viewpoint the construction of knowledge is adaptive (von Glaserfeld, 1995). This framework insists that learning and development is a process of adjusting mental model to accommodate new experiences. Even though there is no single theory of constructivism, most constructivist approaches emphasize the following elements

- the importance of imbedding learning in complex, realistic, and relevant environments;
- the importance of social negotiation and shared responsibility as part of learning;
- a support for multiple perspectives and the use multiple representations of content;
- learner awareness and understanding that knowledge is constructed and the importance of ownership learning (Woolfolk, 2004).

Constructivists believe that learners should not be given stripped down, simplified problems and basic skill drills, but should encounter complex learning environment that deal with ‘fuzzy’, ill-structured problems (Woolfolk, 2004). Complex problems are not simply difficult ones; they have many parts. They are characterized by multiple, interacting elements with many possible solutions. Constructivist methods illustrate many different ways of reaching conclusions and recognize that each solution may in fact bring a new set of problems. Problems should be embedded in authentic tasks and activities that learners will face in the real world. Noted constructivist theorist, Lev Vygotsky believed that higher mental processes develop through social negotiation and interactions, so collaboration in learning is valued.

Constructivists share the view that multiple perspectives and multiple representation of knowledge are necessary to build principle-based knowledge required in solving novel problems. When learners encounter one only one model, one analogy, or one way of understanding complex content, they will try to apply that one approach to every situation. Constructivism also emphasizes the importance of the learner’s awareness of knowledge construction process.

Previous knowledge is very significant in development. Most constructivists agree that the learner’s previous knowledge is important in determining how the new experiences are processed. If the new experience is too unfamiliar the learner will not be equipped to process the information and learn from the experience.

Constructivism embraces the notion that development is more than the addition of new facts and ideas to an existing store of information. The theory maintains that development is a change in people’s thinking which facilitates changes in behavior. Jean

Piaget's theory of cognitive development offers some useful insights for leader development. Piaget's (1977) fundamental insight was that as individuals interact with their environment, knowledge is constructed. He contended that development occurs when an individual's present schemes or patterns of behavior come into conflict with their present experiences (Slavin, 2000). This conflict provides the stimulus for the individuals to initiate and to sustain efforts towards reconciling expectations and experiences. Leaders interact with their environment through different kind of experiences; formal interventions, job assignments, and other activities whereby they explore and test their environment. As they engage in these activities they simultaneously organize information and alter their thinking processes. The essence of development is this process of altering existing schemes and developing more sophisticated ways of thinking.

According to Piaget (1977) there are two cognitive processes that are crucial for development: the tendency towards organization, and the tendency towards adaptation. Organization is the propensity to combine, recombine, and rearrange thoughts into coherent psychological systems. These systems are organized structures of thoughts that allow individuals to mentally represent or think about the events in their world, and are used for understanding and interacting with the world (Woolfolk, 2004). Thus, simple structures are continually combined and coordinated to become more sophisticated and thereby becoming better suited to the environment.

The second tendency, adaptation, is the tendency to adjust existing schemes in response to the environment. Adaptation involves two processes; assimilation and accommodation. Assimilation takes place when the individual uses his or existing

framework to understand something new. Accommodation on the other hand occurs when the individual changes existing schemes to respond to new information (Slavin, 2000). Individuals respond to their environment by using existing schemes whenever these schemes work and by modifying and adding schemes whenever a new way of thinking or a new behavior is required.

Piaget (1977) further explained that these changes in thinking take place through the process of equilibration – the act of search for balance. He affirmed that organizing, assimilating, and accommodating could be viewed as a kind of complex balancing act. If a particular scheme is applied to an event or situation and the scheme works, then equilibrium exists. If, however, the scheme does not produce satisfying results, then disequilibrium arises, which is an uncomfortable state. This outcome initiates a search for a solution through assimilation and accommodation, and thus thinking changes and becomes more complex. Learners' present knowledge or scheme is important to the kind of experience that is developmental; Piaget (1977) warns that if a task or skill is too unfamiliar, neither assimilation nor accommodation occurs, and thus no development ensues.

Leadership development can be contained and readily understood in this context. Van Velsor, McCauley and Mosley (1998) contend that challenge is an essential element of leader developmental exercises. The element of challenge disrupts the equilibrium of the leader and provides motivation for the leader to reorganize and add to his or her way of thinking; thereby, his or her thinking becomes more sophisticated and better suited to the environment. Other leadership researchers support this line of reasoning. According to Lewis and Jacobs (1992) when leaders' current models of their organization are



challenged through developmental interventions or work experiences, they will attempt to reconceptualize a more complex operating environment, by developing new frames of reference that reflect higher levels of cognitive power.

Leadership development can also be analyzed through the lens of Vygotsky's theory of cognitive development. Vygotsky (1978) regarded development as a lifelong process. For Vygotsky, learning is a necessary and universal aspect of development. Learning from a more competent individual is the capstone to his theory of development. Vygotsky viewed cognitive development as a result of a dialectic process, whereby individuals learn through shared problem solving and social interaction (Woolfolk, 2004). Vygotsky's (1978) argued that development is a process of knowledge appropriation. Specifically, he maintained that every function in an individual's development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then within the individual (intrapsychological) (Vygotsky, 1978).

The second aspect of Vygotsky theory is the concept of the zone of proximal development, a concept that is crucial to our understanding of how learning shapes the course of development. Learning is only possible in the zone of proximal development, a region that lies between what the individual can achieve independently and what he or she cannot achieved even with assistance. Thus learning becomes a conduit for development in this zone through interactions between individuals (Kolb, 1984). The significance of the zone of proximal development is that interventions that present skills that are outside of this area will fail to have any impact on the development of leaders. Even with assistance, activities requiring skills above the zone of proximal development

will not result in learning; individuals would become disorganized, anxious, and unable to cope, while activities below the zone would result in stagnation. Leadership research supports the principle of learning in the zone of proximal development. Lerner, Freund, Stefanis and Habermas (2001) found that an individual's involvement in peer networks outside of his or her zone of readiness typically leads to negative developmental outcomes. Along similar lines, Mumford et al. (2000b) argued that for mentoring to be effective, the mentor should only be moderately advanced beyond the protégé. These observations are not surprising when it is recognized that the success of social interventions depends on the individual's ability to grasp, and act on, the concepts about relationship being provided by others (Douglas & McCauley, 1999). Thus, leadership development programs must structure and time optimize interventions with respect to developmental needs.

Although Vygotsky did not use the term scaffold, the concept bears special relevance to his theory of cognitive development. Scaffolding is a concept that ties the notions of the zone of proximal development to the role of social interaction in development. The essence of scaffolding is analogous the use of the word in construction. Scaffolding or assisted learning provides temporary assistance to the learner. In scaffolding, the individual is given information, prompts, reminders, and encouragement at the right time and in the right amounts. As the learner internalizes the skill this support is gradually removed and the learner assumes more responsibility. As the learner gains experience, it is important for the instructor to continually assess the learner's understanding and provide feedback. This perspective provides a ready framework for understanding the value of developmental relationships in leader

development. Developmental relationships are dialectic processes where the learner learns through shared problem solving with another.

The role of experience is also emphasized in constructivism; and is the focus of lifelong learning and career-development programs. Leadership development can find in experiential learning theory a conceptual rationale and guiding philosophy as well as practical educational tools (Kolb, 1984). Like Vygotsky, Educational Philosopher Dewey determined that experience, interaction, as well as reflection are imperative for learning. The importance of experience is also supported by leadership researchers, Argyris (1993), maintains that learning from experience is essential for organizational effectiveness. The workplace can be visualized as a learning environment that can enhance and supplement formal education, and foster personal development through meaningful work and career-development.

## *Metacognition and Constructivism*

In the strategic document *Officership 2020*, the CF articulated the need to develop officers with the ability to learn from experience. This capability is acquired partly through reflection. Reflection is the process of carefully thinking about an experience. Reflection and metacognition are inextricably linked to the notion of constructivism. Metacognitive processes are internal executive processes that supervise and control cognitive processes (Woolfolk, 2004). They enable planning, monitoring, and the revising of goal appropriate behaviors (Gourgey, 1998). No consideration of leadership behavior is complete without reference to metacognition. Understanding and changing leader behavior requires changes in metacognitive processes (Zaccaro, Gilbert, Thor & Mumford, 1991). Metacognition provides the facility for leaders to make decisions by enhancing the leader's ability to define the nature of a task or problem; select the most useful strategy for executing the task; allocate resources such as time; activate relevant prior knowledge; pay attention to feedback on how the task is proceeding; and translate feedback into improved performance, either during execution or in a plan for the future (Gourgey, 1998). Metacognition enables one to use knowledge strategically to perform most efficiently in the future (Gourgey, 1998).

Theories of leadership development and experiential learning all stress the importance of reflection in leaders' recognition of the need to change patterns of thoughts and behavior (Daudelin, 1996). As the rate of change increases, the capabilities needed by its leaders also change. To maintain their effectiveness, people in positions of leadership must be able to learn, actively and continuously (Van Velsor & Guthrie,

1998). Leaders must be able to recognize when new behaviors, skills, or attitudes are called for, as well as recognize when current approaches are not working.

Flavell (1979) noted that novel situations offer numerous opportunities for thoughts and feelings to emerge about one's own thinking. The metacognitive processing that surrounds these experiences leads to new goals or to the abandonment of old goals and adds to one's personal knowledge base and expertise. Leaders are faced with ill-defined problems that are often characterized by conflicting assumptions, evidence and opinion, all of which can lead to different solutions. Working through ill-defined problems, therefore, requires the use of higher order thinking or metacognition. Individuals – especially leaders – need to monitor the nature of the problem and the value of alternative solutions.

Individuals with greater metacognitive skills are expected to learn more effectively because they monitor their progress, determine when they are having problems, and adjust their learning accordingly (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000). The development of metacognition is essential for achieving higher-order, independent thinking.

As underscored by constructivism, in order to develop metacognitive skills leaders should engage in a variety of developmental experiences to either learn new skills or test skills not previously tested, and to explore new approaches or reframe points of view. Leaders must develop and use a variety of learning tactics to acquire the new skills, approaches, or attitudes. These activities or capacities play an important role in the ability to learn from experience. Riedel (2003) maintained that metacognitive skills can be developed and that the ability to learn from experience can thereby be enhanced.

The development of metacognitive skills presents unique challenges. Metacognition is facilitated through the process of reflection. Many leaders do not spend time reflecting on their experiences and extracting from the lessons contained therein. Additionally the use of metacognitive skills is risky; recognizing the need for new learning is stressful because it requires that people admit to themselves (and possibly to others) that what they are now doing is not working or that their current skills are inadequate. For most people, such an admission provokes some level of anxiety. Leaders have to be taught to be reflective to gain the benefits of metacognitive abilities.

## **Leadership Development in Practice**

Leadership knowledge and skills are developed capacities that emerge over time as a function of experience (Ackerman 1992). Without appropriate developmental experiences, even the most intelligent and motivated individual is unlikely to be an effective leader in organizational setting (Mumford et al., 2000b).

Cynthia McCauley and other leadership researchers at the Center for Creative Leadership have devoted much of their energy and resources to understanding how people can become better leaders. Leadership is an adaptive process whereby individuals become increasingly more effective. Van Velsor, McCauley, and Mosley (1998) define leadership development as the expansion of one's capacity to be effective in leadership roles. This expansion of capacity is required of leaders as their roles become more complex. Jacobs and Jaques (1987) emphasized the need for the cognitive complexity of leaders to at least match the complexity of the operating environment. Cognitive complexity is a characteristic that enables leaders to make high-quality decisions for complex organizational problems. This characteristic allows leaders to perceive multiple strategic options, understand the various characteristics of each option and discern that range of outcomes each option can create under changing environmental circumstances (Hooijberg, Bullis, & Hunt, 1999). Not unlike cognitive theorists, leadership researchers have noted the relationship between cognitive complexity and successful leadership behaviors. Hooijberg, Hunt, & Dodge (1997) noted that cognitive complexity is a precursor to behavioral complexity, and behavioral complexity is a precursor to leader and organizational effectiveness.

Behavioral complexity refers to the collection of leadership roles that officers can perform, and the ability of leaders to vary performance of leadership roles depending on the situation (Hooijberg, Bullis, & Hunt, 1999). Behavioral repertoire relates to the number of leadership roles officers can perform; the broader the repertoire the more likely leaders can respond appropriately to the demands the environment places on them. As emphasized in constructivism, behavior results from cognition; behavioral complexity requires that leaders have the necessary encoded knowledge structures. Leaders high in cognitive complexity will be more likely to demonstrate behavioral complexity (Zaccaro, Gilbert, Thor, & Mumford 1991). Groups headed by complex leaders perform better than groups led by non-complex leaders; hence, a major goal of leadership development is to expand the cognitive complexity of leaders.

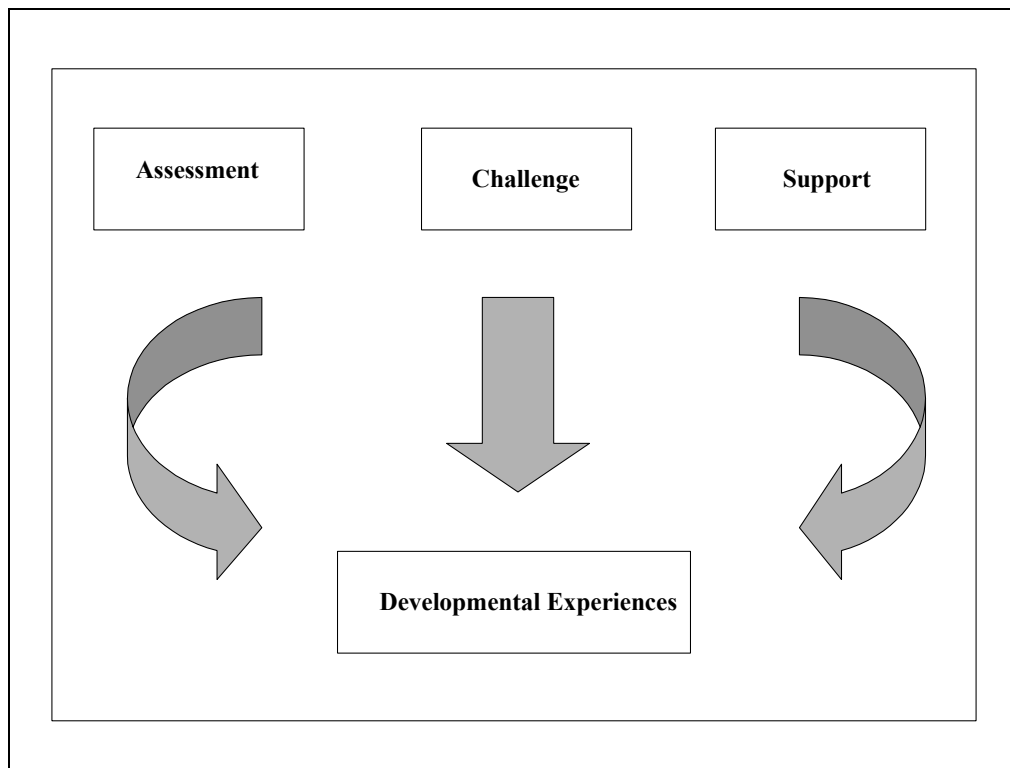
Conceptual understanding of the process of leadership development can enhance the effectiveness with which the organization plans and implement developmental intervention. Individuals charged with the implementation of leader development can benefit from an appreciation of the educational principles underlying sound developmental practices. I will attempt to further illustrate the underlying principles of constructivism in a number leadership developmental practices. Knowledge of these principles will grant practitioners the flexibility to tailor leadership developmental exercises while keeping the developmental elements.

The leadership developmental research has been criticized as not being grounded strongly enough in learning theories (Day 2000). However, a critical review of the developmental model of development presented by the Center for Creative Leadership (CCL) will reveal a constructivist framework. The model presented by the CCL proposes



that although leaders learn primarily through their experiences, all experiences are not developmental. They argue that developmental experiences are characterized by the elements of assessment, challenge, and support. These elements provide the raw materials or resources for learning.

### **CCL Leadership Development Model**



Source: Adopted from Van Velsor, McCauley, & Moxley, 1998

The importance of assessment in leader development cannot be overemphasized. Assessment provides valued information about the leader's current ability and performance. Although some developmental interventions focus on acquiring this appraisal from others, it is equally important for leaders to assess their own performance. The value of assessment is to provide feedback information to the leader on the effectiveness of current ways of thinking and behaving. Reflection and assessment

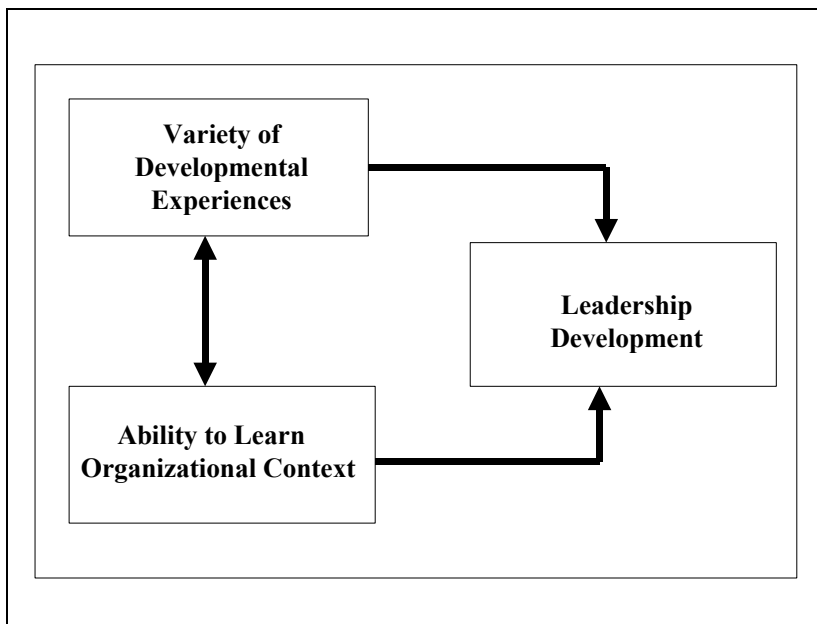
illuminate gaps in the effectiveness of the leader's current way of thinking or behaving. Moreover, assessment triggers an acknowledgement of the need to change as well as the desire to make the change.

According to McCauley (2001), the experiences that can be most potent are the ones that stretch or challenge people. The concept of challenge in leadership development is also closely tied to constructivism. Challenging experiences force people out of their comfort zones: creating a sense of disequilibrium, and causing individuals to question the adequacy of their present skills and approaches. Challenge provides the opportunity and the drive to make the required change. According to Piaget (1977), this disequilibrium is uncomfortable and initiates the motivation for change. In their comfort zone, there is no development because leaders are using skills already mastered. Individuals feel challenged when they encounter situations that demand skills and abilities beyond their current capabilities or when the situation is confusing or ambiguous. Some challenges require the individual to broaden and acquire new skills and perspectives; others require changing old ways of thinking because they are no longer effective. Mastering challenges requires putting energy into developing skills and abilities, understanding complex situations, and reshaping the way of thinking. Vygotsky (1978) also stressed the importance of challenging task for development. He maintained that new capacities are developed, at a level just above the individual level of competency with the aid of an expert.

The third element of the leadership development as outlined by the CCL is support. Support offers confirmation of the lessons learned. By talking to others about one's own struggles, by openly examining mistakes, and by seeing how the organization

reacts positively to the changes made, a person has the opportunity to confirm and clarify the lessons being learned (Van Velsor, McCauley, & Mosley, 1998). Without this element of support individuals can become overwhelmed. Vygotsky also highlighted the importance of support in his concept of scaffolding.

Developmental experiences provide managers with the opportunity to learn. These opportunities can be formal educational programs and training events, but the majority of these experiences occur on the job through job assignments, relationships with others, and hardships (McCauley, 2001). Like the constructivist perspective, this model of leadership development stresses the importance of a variety of experiences and the ability to learn (McCauley, 2001).



Source: Adopted from Van Velsor, McCauley, & Moxley, 1998

The above discussion provides support for my argument that the model of leadership development promoted by the CCL is grounded in constructivism.

## **Leadership Development Interventions**

Based on the review of the educational and leadership literature, it can be advocated that the most effective leadership development interventions that are those that are grounded in constructivism. Leadership development intervention should be crafted with the learner in mind because only those tasks that challenge the existing schemes of the leader will be developmental. The constructivist perspective explains that learning oriented towards developmental levels already reached is ineffective and those that are above the zone of proximal development will be overwhelming for the leader and neither assimilation nor accommodation will occur; leaders will become overwhelmed.

Leadership has been described as a complex skill (Zaccaro, 2001). Skill development can be enhanced when it is embedded in authentic experiences complemented by a variety of context for the practice the skill.

The Ackerman model discussed earlier provides an acceptable model for skill acquisition process. Ackerman maintains that initially people must acquire base concepts, learn what is expected of them and apply these concepts in well-structured relatively concrete situations (Mumford et al., 2000b). Next these concepts must then be elaborated and applied in more complex settings as people begin independent problem solving and learn to apply different concepts in different settings. Finally integration of knowledge drawn from multiple sources and practice opportunities allow individuals to address complex, rapidly unfolding problems.

### *The role of knowledge in leader development*

Knowledge provides the cognitive raw material that is the basis of most problem-solving efforts. Knowledge may be defined as an organized set of facts and principles pertaining to the characteristics of objects lying in some domain (Fleishman & Mumford, 1989). Knowledge is not the same as discrete bits of information – it involves categorical structures, or schema, for identifying, relating, and understanding discrete bits of information. The development of schema requires active, elaborative processing, as individuals search for principles that will organize this information into a coherent whole (Chi, Bassock, Lewis, Reimann, & Gleser, 1989). Research has shown that expert problem solvers have more extensive knowledge structures, organized on the basis of underlying principles that serve to facilitate recognition and recall.

The role of prerequisite knowledge in decision-making underscores the need for the structuring of leadership development. Educators have also always stressed the need for learning to be structured from concrete to abstract. Elaboration theory also advocates a model for sequencing and organizing instruction and training in order of increasing complexity (Reigeluth 1992). A key idea of elaboration theory is that the learner needs to develop a meaningful context into which subsequent ideas and skills can be assimilated. This methodology results in the formation of more stable cognitive structures and accommodates transfer of learning (Reigeluth 1992). This view is also shared by experts in skill development: individuals move from concrete operations to progressively more complex, principle-based knowledge as they acquire expertise (Anderson, 1993). This concept is very important in planning for leader development because the knowledge and skills showing gains at one point in a leader's careers may not be identical to those

contributing to development at other points (Mumford, et al., 1993b). Zaccaro (2001) argued that it is difficult for problem solving skills to grow until the individual has acquired a basic working knowledge of the organization (Zaccaro, 2001). Exercises intended to facilitate the application of requisite problem solving and solution construction skills are unlikely to prove of any great value early in leaders' career because the lack they principle based knowledge structures needed for effective application of these skills (Mumford, et al., 2000b).

### *Initial Leadership Development*

Leaders enter organizations as amateurs. These embryonic leaders lack the relevant forms of knowledge and skills needed to provide a basis for situational appraisal and action selection (Mumford et al. 1993b). This observation suggests that initial experiences should focus on the development of basic knowledge structures by providing basic facts and principles and the essential features of the structures used to organize this information. Leaders must acquire a pertinent knowledge base before they can be expected to solve organizational problems. Initial leadership development should focus on providing leaders with requisite base concepts and the opportunity to apply these concepts in relatively concrete situations. Concepts should be built in such a manner that would provide a strong foundation for further learning and provide the basic cognitive structures needed to solve components of more complex problems. Opportunities should be provided for the concepts to be elaborated upon and applied to more complex settings as the individual begins independent problem solving. The learners should also have the opportunity to apply knowledge in different settings.

Conceptual programs and skill building programs are also important in initial development (Conger & Benjamin, 1992). Conceptual approaches to leader development focus on a cognitive understanding of what is involved in the task of leadership and what it takes to be an effective leader. Conger and Benjamin (1992) report that conceptual programs are a natural first step for those with little leadership experience, as they help individuals gain awareness of what leadership is and create enthusiasm for the idea of leading.

On the job training, job assignments, and other kind of interventions should follow formal initial development programs to provide opportunities for skill elaboration and refinement. Day (2000) reviewed a number of contemporary leadership developmental practices and presented an overview of a number of promising practices. These practices will be presented, and the underlying educational principles will be discussed.

### *360-Degree Feedback*

Research has confirmed that the use of 360-degree feedback is one of the best methods to promote increased awareness of skill strengths and deficiencies in leaders (Thach, 2002). 360-degree feedback is a method of systematically collecting opinion on the leader's performance from a wide range of individuals (Chappelow, 1998). Feedback is collected from direct subordinates, peers, supervisors, and other stakeholders, such as customers and suppliers (Daudelin, 1996). Research shows that 360-degree feedback can improve performance and lead to behavior change (Chappelow, 1998). 360 degrees feedback makes use of reflection, metacognitive skills and social interaction. This

practice forces the leaders to pick up environmental cues about their effectiveness. Day-to-day responsibilities may suppress the ability of leaders to pick up the cues of their effectiveness present in the environment. 360 degree feedback can reveal inconsistencies in the leader's self-concept and lead to the activation of disequilibrium. This kind of introspection can push leaders out of their comfort zone and provide a source of challenge.

### *Job Assignment*

Experience has always been an important component of adult learning theories (Kolb, 1984). The potency of natural learning has been emphasized at a theoretical level by Kolb (1984) and at a practical level by a number of leadership writers (Mumford et al., 2000b). A number of studies have identified job experiences as powerful stimuli for managerial development (McCall, Lombardo, and Morrison, 1988; Wick, 1989). Job assignments are one of the oldest and most potent forms of leadership development. They give the leader the opportunity to learn by doing (Ohlott, 1998).

Learning from experiences on the job is essential for organizational effectiveness. McCall, Lombardo, and Morrison (1988) found that job experiences contribute considerably more than classroom training programs to the development of senior managers. In a study of over 600 managers, Wick (1989) found job experiences to account for 70% of all developmental experiences. Job experiences are believed to be developmental because they provide the opportunity to test skills and behaviors in situations that matter (McCall et al., 1988). Similarly, challenging situations can provide several sources of motivation for learning. The motivation may stem from a desire to



close the gap between actual and desired levels of job competency, to achieve an outcome with significant reward potential, to avoid a negative outcome, or to reduce the discomfort of a painful situation. Developmental components of jobs are characterized according to the opportunity and motivation they provide for learning. The opportunity and motivation for learning interact, creating a force for development (Douglas, & McCauley, 1999).

Leaders develop primarily on the job through confrontations with novel situations and problems where their existing repertoire of behaviors is inadequate and where they have to develop new ways of dealing with situations. Development through job experiences pertains to how managers learn, undergo personal change, and acquire leadership capacity as a result of the roles, responsibilities, and tasks encountered in the job. Authentic and complex tasks are advocated as advancing development within the constructivist framework.

Metacognition and the ability to learn from experience require that leaders have the opportunity to reflect. When an individual engages in reflection, he or she takes an experience from the outside world, brings it inside the mind, turn it over and makes connections to other experiences, and filters it through personal biases (Daudelin, 1996). This process results in an expansion in the ability to be effective.

### *Action Learning*

Action learning can be described as the essence of constructivism. Its foundation can be traced to inquiry-based instruction and cooperative learning methodology used in education. These approaches make use of authentic learning and require that learners work on realistic problems, participate in activities that solve real life problems or create problems that have real-life implications. Learners are required to think critically, analyze information, communicate ideas, reach logical conclusions, collaborate with others, and create multiple solutions (Woolfolk, 2004). Like inquiry learning, action learning can be described as a continuous process of learning and reflection, supported by colleagues, with a corresponding emphasis on getting things done. Action learning is based on the assumption that people learn most effectively when working on real-time organizational problems (Dotlich & Noel, 1998). Participants collectively construct social meanings and shared realities in a community of practice (Day, 2000).

In a typical action-learning program, groups of leaders from the same company are brought together for a series of workshops and field experiences linked by a common focus on a business issue in the organization (Dotlich & Noel, 1998). There is generally a data-gathering phase in which information is sought from both inside and outside the organization. The entire group then analyzes the data. A set of recommendations are formulated and eventually presented publicly to a group of top leaders. While working on the business problem, the group is exposed to formal educational experiences that are designed to construct technical knowledge. Experts may be brought in to facilitate the generation of solutions through brainstorming. Action learning also accommodates team building and the development of group processing skills. Trainees would be required to

learn to use a variety of tools to analyze the problem. Reflection is an important part of the process and forces participants to think about new ways of working (Neary & O'Grady, 2000).

### **Developmental Relationships**

Leadership development has capitalized on the important role of relationships in the learning and development process as supported by the constructivist perspective, by creating formal developmental relationships in which leaders are matched for the primary purpose of learning and development. Douglas and McCauley (1999) contend that developmental relationships are important strategies for enhancing leadership development process. Developmental relationships have the potential to include all of the elements of constructivism as well as the elements of the leadership developmental model espoused by the CCL. Developmental relationships include informal mentorship, formal mentoring programs, and executive coaching.

The writings of Vygotsky (1978) exerted a strong influence in shaping the methods of developmental relationships in leadership. Among other things, Vygotsky (1978) emphasized the sociocultural origin of higher mental functioning in individuals. He proposed that individuals develop higher problem solving capabilities through collaboration with experts or more capable peers.

Some forms of developmental relationships can be construed as the cognitive apprenticeship of constructivism. Cognitive apprenticeship has been lauded as a constructivist approach that teaches students how to learn (Chee, 1995). This approach to teaching is based on the core ideas of the traditional apprenticeship. Over the centuries,

this approach has proved to be an effective form of education. By working alongside a master and perhaps other apprentices, inexperienced workers have learned many skills, trades, and crafts (Woolfolk, 2004). Similar to the traditional methodology, cognitive apprenticeship is a learner-centered approach; it begins with what the learner knows, and new knowledge is constructed as the learner works on complex authentic assignments. The focus of this learning-through-guided-experience is on cognitive and metacognitive skills, rather than the physical skills and processes of traditional apprentices (Woolfolk, 2004). This focus requires the externalization of processes that are carried out internally, and hence, not readily observable (Chee, 1995). The approach brings tacit processes out in the open so that they can be observed, and become a model for the learner. Learners are encouraged to reflect on their progress and explore new ways of applying what they are learning. When applicable, conceptual knowledge is taught within the framework of complex task accomplishment. This approach encourages meaningful association through elaboration of concepts and facts. In short, experts provide models; have demonstrations, and provide feedback.

Cognitive apprenticeship uses a number of methodologies. Collins, Brown, and Newman (1989) detailed six methodologies of cognitive apprenticeship. These included modeling, coaching, scaffolding, articulation, reflecting and exploration. Developmental relationships in organizations generally include one or a number of these elements.

### *Coaching*

Coaching is a collaborative partnership between a coach and a client (Storey, 2003). Coaching as a developmental intervention can be very useful in enhancing

metacognitive skills. Kilburg (1996) defines executive coaching as a helping relationship formed between a client who has executive authority in an organization, and a consultant who uses a variety of techniques to help the client achieve a mutually identified set of goals. Coaching relationships are formed for the purpose of improving the leader's professional performance and improve the effectiveness of the client's organization. Research conducted by Thach (2000) has demonstrated the positive effects executive coaching has on increasing leadership effectiveness.

Dialogue is a key to cognitive coaching. Through dialogue with their clients, coaches assist clients by helping them clarify their goals and to form specific objectives to accomplishing their goals. Coaches use questioning strategies to assist their clients to work through their ideas through planning and reflecting. Coaches also assist clients in thinking about the impact of their behavior on others.

Coaching enhances metacognition and the emergence of leadership competencies. The benefits that emerge from coaching can be understood more readily by examining cognitive development theory. The theory provides a framework for understanding how critical cognitive conflict supports heightened performance and competency (Piaget, 1977; Vygotsky, 1978). These theorists argue that interaction is seen to promote cognitive development by creating critical cognitive conflicts. This prompts leaders to question their beliefs and explore new ideas. Hence, if a leader is seen to be following a certain line of inquiry and his or her coach does not follow or agree with the rationale behind the inquiry disequilibrium ensues. The leader, as a result, will initiate strategies to restore equilibrium.

Another way in which others can push individuals beyond their comfort zone is by challenging their thinking (Douglas & McCauley 1999). Peer mentorship, referred to by McCauley and Douglas (1999), as dialoging partners, exposes leaders to different perspectives through questions, probing, and reflection of underlying assumptions. This exploration of different perspectives is often the first step in developing more complex and adaptive frameworks for understanding and acting in the world. Biehler and Snowman (1997) contends that building knowledge and checking it against the concepts of others is a major part of the process of development. They argue that this kind of experience enhances metacognition.

### *Mentoring*

Mentoring has become a valuable tool, and is being used by many professions to develop and enhance leadership skills. Day (2000) advanced that it is an effective means of leader development. Developing a personal relationship with a colleague who is an expert in the field is the hallmark of mentoring. Mentoring has been defined as establishment of a personal relationship for the purpose of professional instruction and guidance (Day, 2000). Formal mentoring initiatives typically involve matching an experienced colleague with a junior leader. The opportunity to observe and interact with members of senior leaders is an especially critical part of mentoring because it helps develop a more sophisticated and strategic perspective on the organization. The experienced leader is expected to provide help, advice, and sponsorship. A key function of mentors is to assist protégés in becoming expert problem solvers. One of the underlying premises of successful mentoring is the value that reflection has for assisting

protégés to become autonomous, expert thinkers. The ultimate goal of mentorship is for the young leader to appropriate the expertise of the mentor. Mentorship is related to the notion of scaffolding in constructivism. It is best coupled when coupled with withdrawal so that the protégé becomes independent.

### **Conclusion**

This paper adopted the position that effective leadership behavior fundamentally depends on the leader's ability to solve the kinds of complex social problems that arise in organizations, and it attempted to examine the development of leadership capabilities. A review of the leadership literature suggested that leadership development should be conceived of as a particular type of adult development, and indicated that leadership development can gain significantly by borrowing from the field of education. Day (2000) recommended that leadership development could be enhanced by integration with learning theories. This paper has attempted this feat by analyzing the leadership development model espoused by the CCL within the framework of constructivism.

The constructivist approach appears to be an appropriate framework in which to understand the developmental elements of leadership development. Understanding these principles can be very valuable to those charged with the responsibility of leadership development within the armed forces because such insight would enable those individuals to be able to design interventions for accomplishing the goal of creating thinking leaders necessary for today and in the future.

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