Kirton's Adaption-Innovation Theory: Managing Cognitive Styles in Times of Diversity and Change

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Kirton's adaptive-innovative theory (1976) was developed in order to explain cognitive tendencies and problem-solving styles. Adaptors desire to do things better; innovators seek to do things differently. KAI is a theory that attempts to explain differences in creativity and, in this understanding, create more cohesion and collaboration among team members. The purpose of this article is to explore the value of KAI for managing diverse cognitive styles in times of change. The broad topic of KAI is examined and the focus narrows to utilizing KAI among diverse teams, especially during times of change and transition. By understanding the differences between adaptors and innovators, leaders can better influence and manage teams of people who are diverse in their cognitive styles.

Kirton's adaption-innovation theory (KAI) has captured the imagination of leaders, academicians, and managers for thee decades. The theory was developed by Kirton (1976) and has been appropriated in various settings (Buffington, Jablokow, & Martin, 2002; Buttner & Gryskiewicz, 1993; Carland, Carland, & Stewart, 2000; Goldsmith, 1984; Jablokow & Booth, 2006; Kubes, 1998; Taylor, 1993). KAI theory is founded on the idea that each person is creative and solves problems (Kirton, 2003). KAI is chiefly concerned with cognitive style and determining how people solve problems. Kirton (1976) described adaptors as individuals who prefer to "do things better" and innovators as people who prefer to "do things differently." He postulated that understanding the cognitive styles of adaptors and innovators would greatly

enhance organizational cultures of change and diversity. Mudd (1996) supported with the following topics that could benefit from exploring KAI: job stress, job turnover, both intra- and intergroup stress, and organizational change.

Kirton also established a KAI inventory to measure the cognitive style of adaptors and innovators (Chan, 2000; Jabri, 1991; S. Taylor, 1993). This inventory/theory has been utilized to provide better understanding of cognitive styles (Aritzeta, 2005; Buffington et al., 2002; Jablokow & Booth, 2006; Kubes, 1998; Meneely & Portillo, 2005; Mudd, 1996; Schilling, 2005), entrepreneurship (Buttner & Gryskiewicz, 1993; Carland et al., 2000), diversity among teams (Buffington et al.; Foxall & Hackett, 1994; Kubes; Shiomi, 1999; Tullet, 1995), problem solving (Buttner & Gryskiewicz; Goldsmith, 1984; Kaufmann, 2004; Summers, Sweeny, & Wolk, 2000; Talbot, 1997), leadership in times of change/transition (Kirton, 2003), and many other organizational situations. Jablokow and Booth posited that KAI has been the focus of at least 90 graduate theses and over 300 scholarly research articles–each of which claim supportive conclusions as to the validity of the theory/inventory. Research shows that understanding adaptive and innovative tendencies of team members can greatly enhance the effectiveness of the organization. KAI theory provides clarity to understanding cognitive styles, tendencies, and creative potential of individuals (Foxall & Hackett; Kaufmann; Woodman, Sawyer, & Griffin, 1993). This insight creates an environment that is conducive to ingenuity, diversity, and creative leadership (Meneely & Portillo; Skinner & Drake, 2003). Kirton observed that KAI theory will assist in managing diversity, cognitive gap, and change.

Gardner (1989) noted, "Creativity is best described as the human capacity to regularly solve problems or to fashion products in a domain, in a way that is initially novel but ultimately acceptable in culture" (p. 14). In order to manage diversity and change among a conglomerate of cognitive styles, a leader must maintain the capacity to capitalize upon the creativity of the team in regards to the members' ability to solve problems. KAI theory provides tools to index the creativity/problem-solving tendencies of the team in order to achieve these results. The purpose of this article is to explore the value of KAI for managing diverse cognitive styles in times of change. This review consolidates and expands upon past KAI literature for the purposes of: (a) offering an overview of the KAI theory, (b) explaining its usefulness in regard to cognitive styles, (c) observing its benefits within team diversity, (d) noticing its effects during times of organizational change, and (e) identifying key issues for future research. The end result is a better understanding of the KAI theory and its implications for organizational/team leadership.

Theoretical Framework

Kirton (1976) introduced the adaption-innovation theory in 1976. It was initially a theory developed to determine cognitive style (Jablokow & Booth, 2006). Since its creation it has been implemented and developed by many others (Foxall & Hackett, 1994; Goldsmith, 1984; Hutchinson & Skinner, 2007; Kirton; Kubes, 1998; Kwang et al., 2005; Meneely & Portillo, 2005; Rosenfeld, Winger-Bearskin, DeMarco, & Braun, 1993; Schilling, 2005; Talbot, 1997). The adaptation-innovation inventory was also created in 1976 to identify adaptors and innovators on a continuum scale (Kirton).

Adaption-Innovation Inventory

Kirton (1976) stated, "The contention . . . is that everyone can be located on a continuum ranging from an ability to 'do things better' to an ability to 'do things differently,' and the ends of this continuum are labeled *adaptive* and *innovative,* respectively" (p. 622). He proceeded to develop an inventory to help place an individual along the continuum. The inventory consists of 32 questions/statements. The scores can range from 32 to 160. A person with an adaptive cognitive style will score in the 60-90 range. Someone with an innovative style will score between 110 and 140. The inventory originally only consisted of the subscale factors adaption and innovation. These were considered obvious and not officially established (Mudd, 1996). According to Mudd, eventually the inventory was categorized into three subscale factors: efficiency (E), rule/group conformity (R/C), and originality (O). These each represent different sections of the inventory in order to produce more accurate results. Chan (2000) described the three subscales as: (a) O–refers to the preference for production of original ideas; (b) E–categorizes an individual's preference for efficiency, precision, and reliability; and (c) R/C–operates according to rules and regulations.

There is ongoing debate as to the number of factors needed/represented within the inventory. Kirton (1976) promoted a three-factor scale, while W. G. K. Taylor (1989) called for a four-factor scale. Taylor argued that the O subscale should actually be considered to contain a major component and a minor component.

Kwang et al. (2005) maintained that the inventory has proven to correctly predict an individual's creative style and creative level. Kirton (2003), however, believed that the inventory is directly concerned only with style or "with how people solve problems" (p. 4). Kirton emphasized that the inventory is not designed to judge the level of creativity, or deem one trait (adaptor or innovator) above the other. The goal is to describe the differences in order to foster unity and understanding among work groups/teams (Buffington et al., 2002).

Adaption-Innovation Theory

Kirton (2003) noted, "The Adaption-Innovation Theory is founded on the assumption that all people solve problems and are creative" (p. 4). The manner in which each person solves problems varies. Adaption-innovaton is a bipolar construct that helps define each person's preferred approach to problem solving (Hutchinson & Skinner, 2007). On one side of the continuum are the adaptors, on the other are the innovators.

Adaptors. Adaptors are described as "doing things better" (Kirton, 1976). They prefer to improve the team and/or organization within the existing framework (Kaufman, 2004). Buffington et al. (2002) noted that adaptors prefer more structure when problem solving. They proceeded to observe that adaptors prefer structure that is consensually agreed. Kirton originally defined adaptors with the follow descriptors: (a) concerned with solving problems rather than finding them, (b) seeking solutions to problems in tried and understood ways, (c) maintaining

high accuracy in long spells of detailed work, (d) rarely challenging rules, (e) sensitive to maintaining group cohesion, and (e) providing a safe base for the innovator's riskier operations.

Innovators. Kirton (1976) referred to innovators as those who would prefer to do things differently. Kwang et al. (2005) postulated that innovators have a tendency to overhaul the entire work process. They are less concerned with acting in accordance with existing structures (Jabalokow & Booth, 2006). Kirton described innovators as (a) seemingly undisciplined, approaching tasks from unsuspected angles, (b) treating accepted means with littler regard in pursuit of goals, (c) capable of detailed tasks only in short bursts, (d) providing the dynamics to bring about periodic revolutionary change, and (e) having low self-doubt when generating ideas.

Within this theory, the individual's problem-solving style does not change over time or with age (Buttner & Gryskiewicz, 1993). Adaptors and innovators each exhibit different attitudes that can be either positive or negative for the organization (Kubes, 1998). One set of these characteristics comes more natural for each person (Buttner & Gryskiewicz). Everyone can portray attributes of his or her opposite style as a coping mechanism, but will eventually return to the preferred style (Kirton, 2003). This theory promotes that a key to effective collaboration is in understanding each person's cognitive style and working along side someone of the other style for balance (Meneely & Portillo, 2005).

KAI Development

Table 1 displays some of the empirical research and subjects that have been measured and/or enhanced by use of the KAI inventory/theory.

As can be seen in Table 1, KAI has made a significant contribution to the landscape of organizational leadership. The theory has been utilized to assist in many areas, specifically the recognition of cognitive style, problem-solving techniques, and management of diversity/change.

The theory was initially constructed out of a need to explain creativity and problem solving within organizations. Kirton (2003) observed that the leadership constructs in the late 1960s and early 1970s did not fully explain the cognitive processes of problem solving. Drucker (1969) promoted that leaders/managers were bureaucrats and must be adaptive in nature, focusing on doing things better rather than different. Weber (1970) also promoted bureaucratic leadership and Rogers (1959) classified creative leaders as "loners." Kirton noticed a need for "a wider view of style, uncluttered by level, [that] permitted support for the disagreement with Rogers that only a few people were creative, whilst finding room for . . . Weber (bureaucrats) in creativity" (p. 179). He developed the KAI theory in order to explain that all people are creative and problem solve, they simply differ in approach and cognitive style. One is not positive and the other negative, but both are essential in leadership. KAI was introduced in order to endorse the creativity and problem-solving potential of all leaders. Kirton felt that the introduction of the KAI theory would produce better understanding among leaders and lead to higher mutual respect in order to bring about more effective collaboration.

KAI developed throughout the 1970s and 1980s primarily as a way to explain creativity and problem-solving tendencies. The definitions of adaptor and innovator were further developed and clarified. KAI developed along with leadership literature to include situational leadership

theory (Blanchard, 1985), transactional leadership (Cacioppe, 1997), transformational leadership, entrepreneurial leadership (Buttner & Gryskiewicz 1993), global leadership (Shiomi, 1999), and

Table 1: Empirical Research Utilizing KAI

Author	Subject
Buffington, Jablokow, & Martin (2002)	Entrepreneur's problem-solving styles: empirical study using KAI
Buttner & Gryskiewicz (1993)	Entrepreneur's problem-solving styles: empirical study using KAI
Chan (2000)	KAI inventory using multiple-group mean and covariance structure analysis
Foxall & Hackett (1994)	Styles of managerial creativity: KAI comparison of United Kingdom, Australia, and United States
Goldsmith (1984)	Personality characteristics and KAI
Hutchinson & Skinner (2007)	Self-awareness and cognitive style: KAI, self-monitoring, and self-consciousness
Jabri (1991)	Educational and psychological measurement: modes of problem solving
Kaufman (2004)	Two kinds of creativity
Kubes (1998)	KAI in Slovakia: cognitive styles and social culture
Kwang, Ang, Ooi, Wong, Oei & Leng (2005)	Values of adaptors and innovators
Meneeely & Portillo (2005)	Personality, cognitive style, and creative performance
Mudd (1996)	KAI inventory: evidence for style/level factor composition issues
Schilling (2005)	Network model of cognitive insight
Shiomi (1999)	Cross-cultural response styles and KAI

Author	Subject
Skinner & Drake (2003)	Behavioral implications of KAI
Taylor (1989)	KAI: re-examination of inventory factor structure
Tullett (1995)	KAI cognitive styles of male and female project managers
Woodman, Sawyer, & Griffin (1993)	A theory of organizational creativity

team leadership (Buffington et al., 2002). Kirton (2003) noted an interesting shift from the original KAI literature in holding adaptors in higher regard than innovators, to the current literature that favors innovators to adaptors. He noted, "The present trend that promotes 'innovation' as the panacea for all ills may be weakening" (p. 194). He continued to emphasize that one cognitive style is not "better" than the other and that each add value to organizational leadership. He promoted the need for a balance in the literature, not favoring one style over the other, but recognizing the value of each person's problem-solving capabilities.

Cognitive Style: Change and Diversity

Much of the current literature revolves around this idea of valuing both the innovator and adaptor. Upon Kirton's recommendation, several studies have focused on the value of recognizing cognitive style (Aritzeta, 2005; Buffington et al., 2002; Carland et al., 2000; Foxall & Hackett, 1994; Hutchinson & Skinner, 2007; Jablokow & Booth, 2006; Kubes, 1998; Meneely & Portillo, 2005; Skinner & Drake, 2003; Tullet, 1995). Kirton and these other authors recognized the need for understanding cognitive style within the context of globalization. Managers are faced with the problem of leading diverse teams in a rapidly changing culture. KAI theory is effective in recognizing the value of individuals despite their style of problem solving.

Cognitive Styles

A recent development within KAI research is utilizing the theory to understand and manage cognitive gap within organizations (Jablokow & Booth, 2006; Kirton, 2003). Kirton described all individuals as problem solvers and thus each person is an agent of change. He advocated that people differ in their approach to problem solving. Some are more comfortable as change agents in certain scenarios depending on what they deem as acceptable change. This difference within the cognitive process of individual's is defined as "cognitive gap." Jablokow and Booth defined cognitive gap as (a) the difference between difficulty of a specific problem and the cognitive ability of the problem solvers seeking the solution, and (b) the difference

between the cognitive styles of the problem solvers themselves. KAI promotes that everyone is capable of problem solving and helps the manager understand the cognitive gap within the team to know which scenarios will allow the individual to thrive. The idea that all individuals are creative is a recent development in creativity research (Riding, 2001). It is a shift from the "creative genius" theories of the past that touted creativity as a characteristic of only a few uniquely gifted individuals (Rogers, 1959).

Jablokow and Booth (2006) utilized the KAI theory to increase the effectiveness of a high-performance product development organization. They intentionally assigned adaptors in the group to maintenance of the current production system. They placed the innovators in research and design and total quality management. They noticed that each person exhibited more creativity if placed within an environment that matched their cognitive style. They noted, "In general, [this study] supports the proposition that engineering managers and team leaders can learn to mentor individuals and tailor work assignments based on problem solving levels and styles, leading to improved performance overall" (p. 330).

Buffington et al. (2002) also researched the benefits of recognizing cognitive style within team dynamics. When noticing and valuing the cognitive gaps within the organization, they observed the following results:

1. Conformity and consensus—while adaptors tend to place more emphasis on group conformity, an understanding of the different cognitive styles brought about more consensus within the work groups.
2. Relevance—understanding the cognitive gaps allowed adaptors to view the innovators contributions with more relevance. Understanding the cognitive styles of other individuals added value to their suggestions concerning problem solving.
3. Conflict—while conflict exists between innovators and adaptors, understanding cognitive gap reduced the conflict between work groups.

Kirton (2003) observed the importance of leaders as bridgers. "Bridging is reaching out to people in the team and helping them to be part of it so that they may contribute even if their contribution is outside the mainstream" (p. 247). Bridgers can utilize KAI to close the cognitive gap within their team. It is the bridger's job to recognize when someone is working at the edge of their cognitive capacity and move them within a role that is more conducive to their style. While a manager can expect for team members to temporarily operate outside of their normal cognitive style, this is not a sustainable action. KAI gives the leader the tool to understand each person's problem-solving capacity and narrow cognitive gaps.

KAI: Cognitive style in diversity. The world is rapidly becoming globally diversified. This produces a unique challenge for leaders. Many have used KAI as a tool to enhance understanding of differing cognitive styles (Foxall & Hackett, 1994; Kirton, 2003; Kubes, 1998; Shiomi, 1999; Tullet, 1995). Kirton offered, "Differences in adaption-innovation are just such 'revealed' variations that can be increasingly useful in a complex environment" (p. 207). KAI is beneficial in collaborating with others in the task of problem solving. In order to communicate effectively, individuals must understand the tendencies and potential of other team members. Kirton suggested that KAI does more than promote tolerance; instead it teaches a new diversity that replaces simple "tolerance." In a complex environment an array of problems will arise. With

this in mind, Kirton stated, "Having available a diversity of approach and a diversity of people that can readily manage them for the common good is useful" (p. 227). KAI can provide a platform for diversity to shift from a potential threat to a helpful team characteristic. Some empirical examples of KAI within diversity are outlined in Table 2.

Table 2: Empirical Studies Concerning KAI and diversity

Author	Context
Foxall & Hackett (1994)	KAI comparison of United Kingdom, Australia, and United States
Kubes (1998)	KAI in Slovakia
Shiomi (1999)	Cross-cultural responses to KAI
Tullett (1995)	KAI: male and female project managers

Tullett (1995) explored the differences between male and female project managers. Interestingly, the innovative KAI scores of women were consistently higher than that of the men. He asserted this is due to the need for women to demonstrate more innovative characteristics to break into higher-level leadership. In order for females to move into management they must cross the boundary of the managerial subgroup along with the boundary of management in a society (UK) in which women are not equally represented in leadership. This necessitates more innovative tendencies to be exhibited among female project managers. Tullet's study highlights the need to understand the nuances of culture and the value of each person's cognitive style regardless of gender.

Foxall and Hackett (1994) conducted empirical research comparing KAI scores of managers from the United Kingdom, Australia, and the United States. The results showed a similar total KAI score for managers from each location. Interestingly, however, they noticed the need for "facilitators" in order to establish effective teams. These facilitators are individuals who obtain a median score on the KAI inventory. Within the more successful teams these "bridgers" are able to negotiate between the adaptors and innovators. This observation can assist teams of diversity by revealing these balanced problem solvers and allowing them to facilitate diversity in the team members' cognitive style.

Kubes (1998) also noted similar scores among Slovakian, Italian, and American KAI scores. He noted, however, that the effectiveness of the KAI is confirmed with its consistency across cultural boundaries. He observed the benefit of KAI within diverse organizations. Kubes (1998) offered the following proliferation:

Studying processes of cognitive preferences and helping individuals with different preferences to find ways of mutually fruitful and beneficial collaboration is critically needed in order to guarantee that the future will be as "velvet" as the revolution. In this

respect, introducing the KAI theory of cognitive style and standardizing the KAI inventory helps to re-establish democratic principles in people's everyday lives, where tolerance to a variety of views, mutual respect, and acknowledgement of unique value of each individual are strongly needed. (p. 197)

This statement effectively summarizes the function of KAI in managing diverse cognitive styles.

KAI: Cognitive style in change. Along with rapid globalization, organizations are being forced to deal with a quickly changing culture. Kirton (2003) noted that a hallmark of good leadership is creating wider consensus among team members. He stated that leaders must consider the goal of widening the circle of people who feel that they are contributing directly to the common aims of the group as a whole. He promoted KAI as a theory with the potential to navigate a rapidly changing organizational climate.

Kirton (2003) also observed that KAI balances current research that promotes innovation as the key for organizational/team success. The current trend is to elevate highly innovative leaders and seclude creativity to a select few leaders (Jablokow & Booth, 2006). KAI values each individual as an effective change agent and problem solver (Kirton). Buttner and Gryskiewicz (1993) provided empirical research utilizing KAI in evaluating entrepreneur's problem-solving styles. The expected result was that successful entrepreneurs would act as change agents and be highly innovative. This was, in fact, the case. Entrepreneurs do tend to be more innovative. Interestingly, however, innovative risk takers were more prone to failure. Adaptive entrepreneurs were more likely to succeed over the long haul. The most successful case scenario is having innovative leaders envisioning the future, with adaptive leaders managing day-to-day tasks. KAI is a theory that can provide a balanced view of the value of the cognitive styles of each person. Effective, long-term change is most likely when both adaptors and innovators are allowed to influence the process.

Tullett (1995) also utilized KAI in order to research effective management of change. He observed that research conducted with individuals who have significantly different cognitive styles over a long period of time proved that cognitive style among the individuals did not change. Change did occur, however, in the expressed behavior among the team members. KAI brought an understanding and increased appreciation of each person's cognitive style. This allows managers in high-change scenarios to bring about more effective collaboration and widen consensus.

Foxall and Hackett (1994) offered research that refutes the idea that all managers must constantly innovate in a rapidly changing and competitive market. Within these markets adaptive managers are found in approximately equal numbers as innovative managers. They promoted that organizations have noticed it is a mistake to focus on the more innovative team members at the expense of the adaptive leaders. They concluded that while there are times of especial turbulence when the innovative leaders are the focus, most organizations will depend heavily upon both cognitive styles. KAI provides the opportunity to value each team member as an effective part of the change process.

Kirton (2003) offered the following thought that is a fitting conclusion to this section:
For a long time now we have vainly searched for ideal leaders who can, with the help of their teams, be guaranteed to solve specific arrays of problems. But we have long known

that such leaders cannot hope to solve any such increasingly complex arrays by relying on knowing enough personally to arrive at all the answers. It is the whole team that needs to solve the problems with the help of capable, knowledgeable leaders. . . . Today, problem-solving leaders must accept that while they cannot hope to have all the knowledge required to solve any specific set of problems, they need to know more of the theory and practice of problem solving and about their key resource–the problem solver. (p. 312)

The above-mentioned research recognizes that KAI is a theory that can help in understanding the problem-solving tendencies of each employee. The theory can help navigate times of change by widening consensus and noticing the asset of each person despite cognitive style.

Conclusion

Kirton developed the KAI theory in 1976. He developed it in order to help organizations understand problem-solving and cognitive style. Adaptors are problem solvers who attempt to do things better; innovators are also problem solvers who desire to things differently. The leadership pendulum has shifted from valuing the adaptor over the innovator in the 1970s and 1980s to preferring the innovative leader in the 1990s and 2000s. Kirton's desire was to promote that each person is creative within his or her cognitive style. One style is not better than the other and both are needed in organizations.

KAI is a theory that can assist managers in dealing with cognitive gaps within the organization. Managing wide arrays of cognitive styles is becoming a necessity for leaders within rapidly changing and diversifying organizational climate. KAI can assist the managers by valuing workers on both sides of the cognitive gap, from all backgrounds, and who carry different ideas on the process of change. Understanding adaptors, innovators, and facilitators/bridgers can help leaders navigate both diverse teams and organizations facing the need for change.

While KAI has been researched for over 30 years, advancements can still be made. Future research should consider specific case studies of multi-cultural teams working together for a common task. While previous research has compared work groups from different countries, not enough research has been conducted concerning KAI multi-cultural teams in collaboration. Also there has been no research to date correlating KAI with leading volunteer/non-profit organizations. KAI theory could be beneficial in understanding placing volunteers in fulfilling roles within organizations.

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