Reducing Conflict and Increasing Productivity Within International Extension and Agricultural Teams Using Kirton’s Adaption-Innovation (KAI) Theory

Cheri Winton Brodeur, Ph.D
University of Florida
P.O. Box 110285
Gainesville, Florida 32611
Phone: 352-392-0386
Fax: 352-392-9633
e-mail: cbrodeur@ufl.edu

Abstract
Advances in communication technology and other types of technology are leading to both an unprecedented increase in the size of organizations and in many cases to globalization of organizations. This phenomenon has led to issues related to complexity. One of the primary concerns related to complex organizations is linked to the failure of organizations because of ineffective problem solving. Failure frequently occurs when problem solvers are unable to see all the ramifications their solutions are likely to incur. For this reason knowledge teams are quickly replacing the traditional single leader or management team for problem solving purposes. Lewin (1943) warned that teams would become essential to problem solving and this time has arrived. It is teams who must provide the holistic range of knowledge and diversity necessary to effectively problem solve within a complex organization. A team’s ability to effectively problem solve is critical to organization survival. Unfortunately teams fail as often as they succeed often because of dissension. Millions of dollars have been spent in training to improve team cohesion without sustainable improvements in many cases.

This paper looks at the need for changing theory which provides a better explanation as to how and why complex organizations are failing and why the need for cohesive teamwork. Covered is the cognitive (thinking) style theory that appears to be critical in improving teamwork success thus leading to more effective problem solving. Kirton’s Adaption-Innovation Theory, one of the best thought out cognitive style theories, is explored. Although cognitive thinking style theory has been studied for several decades it has not been considered in most research related to team effectiveness and problem solving and the practical application of Kirton’s theory.

Also included in this paper is discussion on the process of teamwork as part of team problem solving. This paper adds to the recent work of Salas, Sims and Burke (2005) in the area of core teamwork competencies.

Keywords: Teams, problem solving, cognitive style, teamwork, Kirton
Introduction
Successful team problem solving is essential to the survival of international extension and the
global agricultural community. The level of complexity that exists in the world today adds an
additional and critical variable to the understanding of effective problem solving involving
international teams. Lewin (1943) and others have long suggested that the use of teams is critical
to effective problem solving especially because of complexity caused by advanced
communication technology and the ensuring globalization that followed.

There is a great deal of published research on team conflict. And yet, the whole process
of teamwork and problem solving as a whole is still not understood well enough to predict the
possibility of conflict and failure with a high rate of success. Many researchers have looked at
the issue of diversity as playing a key role in the development of conflict. Types of diversity
frequently studied relate to age, gender, and ethnic and racial background. Many of these
research projects end with the question being asked, “Why is it that when several teams seem to
be equal in areas of diversity, one team may function successfully while another team does not?”
The question is often left for further study.

Few studies have included the diversity of cognitive (thinking) styles as a method of both
understanding and reducing inter and intra-team conflict even though cognitive style has been
studied in clinical psychology for over thirty years. Cognitive style is defined as an individual’s
preferred method of problem solving to bring about change. “[Cognitive] style is a diversity in
the very core of each individual’s problem solving process” (Kirton, 2006). This paper will
discuss cognitive thinking style as presented through Kirton’s Adaption-Innovation (KAI)
Theory and provide practical application for reducing conflict and improving team performance
using Kirton’s theory as an underlying framework of ten core teamwork constructs.

Purpose of Paper
The purpose of this paper is to provide insight into understanding the influence that the diversity
of thinking style can have on the success or failure of team interaction and to provide a list of
core teamwork constructs that when integrated to an awareness of cognitive style can improve
team interaction and outcome. The awareness by the team members of the existence of cognitive
or thinking style diversity and its affect on team interaction can significantly reduce
misunderstanding and conflict within international teams and increase the likelihood of effective
outcome. By applying KAI awareness to ten core teamwork constructs recently identified by
Salas et al., (2005) and Brodeur (2006) a fresh approach has been identified for further study to
better understand how team conflict develops, how to improve team cohesion thru better
teamwork and thereby increase effective problem solving.

Theoretical/Philosophical Themes
This is a theoretical theme that provides a starting point for future research in the area of team
problem solving based on Kirton’s Adaption-Innovation (KAI) theory which says that each
human being has a preferred cognitive (thinking) style. This theory suggest that it is the diversity
of style (cognitive gap) that exists between team members that is fundamentally responsible for
tension leading to conflict but at the same time it is the diversity of style that provides the most
effective solutions.
Kirton’s Adaption-Innovation Theory

The use of teams has been identified by many researchers as being a pivotal element to problem solving in complex societies today (Burke, 2002; Barrick, Stewart, Neubert & Mount, 1998; Sunstron, DeMeuse, & Futrell, 1990, Senge, 1990; Goodman, Ravlin, & Schmike, 1987). The concept of teams is not new since even cavemen used teams to deal with the same problems that face modern man—that is, there are always a variety of problems and a diversity of solutions, and teams have to some how reach the best solution using available resources. Kirton’s theory (2006) provides reasoning as to how the preferred thinking styles of team members interact, and in a subtle but powerful way influence the outcome of the teamwork dynamics. Cognitive or one’s thinking style is the preferred way in which an individual brings about change through problem solving. Cognitive style is so subtle that most people are not aware that it exists, and yet it appears to be fundamental in effective problem solving process as well as in the development of conflict.

Kirton explains cognitive style by using a continuum line labeled from highly adaptive to highly innovative. Adaption is defined by Kirton (2006) as applying to those individuals who prefer to problem solve using resources and knowledge found within the organization in which they exist. They prefer to “fix” what already exists. Adaptors bring about change because the structure in which they are working is altered but this change is generally not considered to be transformational but rather transactional in nature. Innovators on the other hand, prefer looking outside the environment in which they exist to find solutions. They are capable of working inside the environment in which they exist but their preference is to find something new that brings about total or transformational change. This simple theoretical perspective of “fixing” versus “replacing” begins to explain how tensions and misperceptions can develop when cognitive style is not understood in the problem solving process. For example, adaptors often misperceive innovators as being risky and abrasive while innovators frequently see adaptors as being inflexible and intolerant of ambiguity (Kirton, 2006).

Kirton has arranged cognitive style on a neutral continuum from highly adaptive at one end to highly innovative on the other. The higher on the innovative end of the continuum (figure 1), the less likely the innovator is to have regard for consensual structures and the more likely they are to look for solutions outside the existing structure leading often to transformational changes. The higher on the adaptive end the more likely the adaptor is to have regard for existing structure and more likely to resist transformational change (Kirton, 2006). The figure below shows Kirton’s continuum. It should be remembered that the continuum is neutral in that all thinking styles from high adaptor to high innovator are important and have value in the problem solving process.

(Used with permission from M.J. Kirton, 2006)

Figure 1. Kirton’s adaption-innovation continuum
It would appear that the easiest solution to the conflict caused by cognitive style is to reduce the diversity by choosing all adaptors or all innovators for a team and thus relieve the tension and possibility of conflict. Many leaders make this mistake. They are often not aware that the wider the diversity on a team (referred to my Kirton as cognitive gap) the more likely the team is to find the best solution to the problem. Also, research has shown that more than 20 points difference anywhere on the continuum between members can lead to dissension (Kirton, 2006). This leads to a paradox of structure that both enables and limits the team. The wider the gap, the more likely the best solution to a problem can be found (enabling) but at the same time the more likely the group is to fail because of the same team diversity (limiting). However, if the diversity is managed well the team will be enabled and the limiting factors can be diminished. This concept seems simple, but in fact is quite complex. In order to apply Kirton’s cognitive style theory to practical application it requires a deeper understanding of the theory and how it applies to problem solving.

Problem A/Problem B

The first and most important concept in understanding the KAI theory as it relates to problem solving is that the problem is always central to the process. In Kirton’s A-I theory, everything in problem solving revolves around the identified problem. Looking at the problem from this fresh perspective can make a big difference in managing diversity and increasing team cohesion.

Teams must clearly understand a concept Kirton refers to as Problem A/Problem B. Problem A is defined as the problem the team has been asked to solve. Problem B exists when the team is not able to maintain cohesion or when more than one problem A exists. There can only be one problem A at a time although there can be subsets of the same problem on which the team is working. The reason is simple. Energy within a team is limited. When more energy is expended on problem B than on problem A, effective problem solving of problem A can not occur (Kirton, 2003). To this end it is important that teams have a shared understanding of what the problem is that they must solve as well as understanding the process necessary to problem solve. Although this is a simplification of a complex theory it provides the reasoning behind the need for those involved in problem solving to understand both the theory and the practical application of KAI theory in order to better understand and attain effective problem solving.

Team composition

Team composition is also based on the problem. Complexity in international Extension and international agriculture makes it difficult to see how a solution will affect all parts of an organization or multiple organizations unless the right knowledge team exists. This means that quite often a team is not complete at the beginning. Once the problem begins to be discussed and better defined it often becomes necessary to bring additional members onto the initial team. In a traditional team adding new members has frequently led to conflict or at the very least increased tension. When all potential team members have an awareness of Kirton’s A-I theory this is less likely to occur. The reason for this is that besides providing critical knowledge necessary to problem solve, all team members play an active role in the management of diversity on the team. The management of diversity is not just a team leader responsibility. New members arrive on the team aware of these responsibilities.

Team members have obligations not rights. It is the obligation of each member to add to the solution of problem A and to actively work to reduce the development of problem B. This means that each individual member accepts certain responsibilities and must be actively involved
in the group interaction and team dynamics. Using ten core teamwork constructs based on an awareness of cognitive thinking style theory the team members may be able to both manage diversity and increase the likelihood of successfully problem solve.

Teamwork constructs
In the past, much research has been done on problem solving and the importance of task work on outcome. Leaders generally believe that having successful teams simply means bringing individuals together and giving them a charge and then leaving them to work on the task (Barrick et al., 1998). This is not the case, and literature shows that teams are as likely to fail as they are to succeed without the proper training and understanding of the problem solving process (Senge, 1990). After two decades of research information, much of it coming out of the military and aviation, there are indications that although “task work skills provide the foundation for effective team performance they are a necessary, but not sufficient condition . . . teamwork skills are also needed” (Burke et al., 2004, p. i96). Burke et al. (2004) defines task work skills as the skills needed to complete individual task performance. Teamwork skills are “cognitive, behavioral, and attitudinal actions that members need to function effectively as part of an independent team” (Burke et al., 2004, p. i96). It is through teamwork skills that cognitive diversity can be most successfully managed.

Salas, Sims and Burke (2005) identified what they believe may be eight of the core teamwork skills or constructs. These include mutual performance monitoring, backup behavior, adaptability, team orientation, team leadership, shared mental models, mutual trust, and closed-loop communication. Brodeur (2006) increased communication to include internal and external communication and added two more constructs to the core list: shared vision and negotiation. Each of these constructs has a specific importance in the management of diversity and for this reason the importance and value of all ten constructs should be understood by Extension and agricultural personnel who may serve on both domestic and international teams. Once team members are aware of these ten teamwork constructs and how they are used to strengthen the team’s cognitive diversity and enforce the team’s obligation to self-manage problem solving outcomes may become more predictable. The constructs are not presented in any order of importance.

Definitions of core teamwork constructs
The definition of mutual performance monitoring is the ability to develop a common understanding of the team environment and apply appropriate task strategies to accurately monitor teammate performance (Salas, Sims & Burke, 2005). In other words, it is the ability to keep track of what other members are doing while carrying out one’s own tasks.

Mutual performance monitoring ensures that team members are following necessary procedures and not making errors. The identification and verbalizing of these errors or lapses are what “boost the team from the sum of individual performance to the synergy of teamwork and ultimately to team effectiveness” (Salas, Sims & Burke, 2005, 576). Doten et al., found that the identification and verbalization of errors in tasks is important because individual team members under severe stress are often unaware of their own performance inaccuracies (as cited in Salas, Sims & Burke, 2005).

Mutual performance monitoring (MPM) is embedded in Kirton’s Theory on obligations and rights of team members and responsibility of team members and leadership. Each team member must be aware
of the preferred styles of others on the team and their value based on these styles. They must be aware of perceptions that can arise out of differences in style. And finally, they must be aware of errors occurring that could lead to the development of a problem B. These collaborative efforts to monitor each other is expected to incorporate all steps in the problem solving process and provide feedback that follows tasks as well as subsets of tasks. Monitoring others often identifies needs that can lead to backup behavior.

**Backup Behavior** is one of the essential reasons for using teams (McIntyre & Salas, 1995; Dickinson & McIntyre, 1997; Porter et al., 2003). Backup behavior is the ability to anticipate other team members’ needs through accurate knowledge about their responsibilities. This includes the ability to shift workloads among members to achieve balance during high periods of workload pressure. In other words, it is the “degree to which team members effectively help each other perform their roles” (Porter et al., 2003). The understanding by team members of Kirton A-I theory is as important here as it is in mutual performance monitoring. For a team member to accept another’s help they must perceive that this backup behavior is offered as a positive advance for the betterment of the team performance and not with negative connotations. Failing to understand the differences between the adaptive-innovative cognitive styles can frequently lead to negative perceptions. For this reason understanding the KAI theory is important to the positive implementation of backup behavior and a stronger team interaction.

**Adaptability** is the ability to adjust strategies based on information gathered from the environment through the use of backup behavior and the reallocation of intra-team resources (Salas et al., 2005). It is also defined as altering a course of action or direction in response to either internal or external changes or the ability to recognize any deviations (changes) from actions that were expected, and to make the corrections necessary to reach an effective outcome in problem solving (Salas et al. 2005).

Being able to successfully adapt to change is directly related to cognitive style and Kirton’s theory as it relates to change. Team members must understand their own cognitive style and be willing to move out of their “comfort zone” as required by the best solution to problem A. In other words, the innovator must be willing to accept a transactional change, and an adaptor must be willing to accept a transformational change based on the most effective solution to problem A. Team members who understand this theory are able to maintain a team culture of adaptability. Team members and leaders are then better able to see:

- the global perspective of the team task;
- how changes might alter team roles as they relate to changing tasks; and
- most importantly how to recognize changes that must occur (Salas et al., 2005).

By understanding how cognitive style is related to this process team members should be able to also deter the development of a problem B and thus to concentrate on changes necessary to solve problem A.

As with backup behavior and performance monitoring, team members must interact with and be aware of what all team members are doing. This is essential in order to detect errors and to determine whether or not change within the team must be transactional or transformational in nature (as it relates to the problem) in order to remain focused on the team objective—finding the most effective solution to the problem. This adaptability by the team allows the deviations in the course of the actions to occur, without adaptability the team is incapable of solving any but the most simplistic problem. In a time of complexity and globalization this almost assuredly means the failure of the team that does not have this form of flexibility.
Team orientation is the desire to take the behavior of others into account during group interaction and the belief that team goals are far more important than individual goals (Salas et al., 2005). Team orientation is the strong belief that working together is essential to providing the bonding of a team into a single entity that makes team orientation so important. When teams are made up of individuals who see no value in team orientation this bonding is not likely to occur and they will remain and work as individuals and not as a team. This will lead to failure of the team.

Studies show that even when there are a majority of cooperative team members, they are not able to safeguard against the strength of an individualist in the decision making process. “The cooperators have neither matched the distributive behavior sufficiently nor have they been able to put pressure on the individualists to reduce distributive behavior” (Schei & Rognes, 2005, p. 310). This finding contradicts past research that suggested that individualists in a minority would be isolated and neutralized by the rest of the team (Brett 1991). Instead, research shows that they are capable of great power in pushing through their personal agendas (Schei & Rognes, 2005). For an international team dealing with multiple cultures and other complex issues this could have a devastating effect on finding the best solution. For example, if one member pushes through a regulatory solution that would be best for his country’s agricultural enterprises but it won’t work for the rest of the countries involved on the team, this is not the best solution. The fact that Kirton’s theory provides team members with the obligation and power along with the leader to stop a problem B from forming gives them the right to remove team members who are not team oriented or unable to bond with the rest of the team.

A part of team orientation is the ability to bond. Bonding among members is critical to team orientation. While earlier research did not believe bonding was necessary for successful team interaction, more recent studies suggest otherwise (Beal et al., 2003; Ilgen et al., 2005). For example, Baltes et al. (2002) and Ilgen et al. (2005) found evidence that virtual teams who do not meet face-to-face regularly are much slower in problem solving and have more errors than teams who meet regularly face-to-face. But teams that do meet face-to-face can also have problems as they frequently encounter resistance within their membership to bond. This is often caused by fears both from leaders and members that conflict will occur and they won’t know how to deal with it (Kirkman and Shapiro as cited in Ilgen et al., 2005). Teams often find that conflicts become uncontrollable and can lead to such severe losses of cohesion that the team is not able to function (Robinson & O’Leary, 1998; Senge, 1990; Duffey et al., 2000; Ilgen et al., 2005). This frequently undermines the mind set of individuals to see the value of team orientation. If these fears can not be resolved they constitute a problem B and the team often will fail. A better awareness of Kirton’s theory could help alleviate these fears. Kirton’s theory provides again the underlying framework for group process in that teams must be able to understand preferred cognitive style and how perceptions can affect the bonding of the team as a whole. Team members who understand Kirton’s theory are able to see through perceptions between the two thinking styles that frequently lead to conflict when these perceptions are not understood. Also, understanding the importance of cognitive gap and its value for effective problem solving can effectively change the interaction from conflict to positive energy that is essential to the process.

This change in mind set is critical to the desire of many individuals to interact as a team member and to accept team orientation as having value. This is important as Salas et al. (2005) found that team orientation is essential to team effectiveness “especially during the initial team formation to overcome early hurdles of learning the strengths and challenges of each team member” (p. 584).
Shared mental models are an organizing knowledge structure of the relationships among the task the team is engaged in and how the team members interact (Salas et al., 2005). Shared mental models provide teams with a common understanding of what is required of them (i.e. task and team interaction) (Kraiger & Wenzel, 1997). Shared mental models relate to the team culture and can be affected by actions and variables occurring both internally and externally to the team. The team is part of an “open system” and “the social, political, and economic culture in which we live and work affects their behaviors, cognitions, and attitudes” (Triandis as cited in Kraiger & Wenzel, 1997). Shared mental models are a multi-dimensional construct that relates to anything that can affect the team’s culture from the task to the process to the outcome. For international teams with members from multiple cultures team culture can provide a starting point of understanding and agreement from which they can evolve and grow together allowing them to use the diversity they have to problem solve.

Teams must be able to trust each other. This is critical in an international team dealing with multiple cultures. Too often the misperceptions that members have of each other because of both their cultural backgrounds and cognitive style can lead to mistrust. Therefore it is important to understand cognitive style as a means of increasing trust between members while they build a shared team mental model. Mutual Trust is the shared belief that team members will perform their roles and protect the interests of their teammates. It is the “expectations, assumptions, or beliefs about the likelihood that another’s future actions will be beneficial, favorable, or at least not detrimental to one’s interests” (Rau, 2005, p. 751). Trust is an important variable that has a direct affect on effective team performance (Dirks, 1999). Teams who share trust are much more likely to perceive each others behaviors and actions in a positive, non-threatening way allowing for increased cooperation, and sharing of ideas and information (Mishra, 1996). Trust increases the likelihood of attaining effective performance (Robinson, 1996) by making it easier for teams and team leaders to manage diversity.

When trust is missing, relationship conflict occurs. Rau (2005) defines relationship conflict as “an interpersonal incompatibility and typically includes tension, annoyance, and animosity among team members” (p. 751). When relationship conflict occurs the team is less effective, and if an outcome is reached at all, it will be more likely to be suboptimum in standards (Robinson, 1996). Rau (2005) believes that this weakening of the performance outcome is caused primarily because there is a reduced receptivity to accept the ideas of others leading to a more individualistic rather than cooperative approach to problem-solving. It also causes reduced access to critical information needed for team problem-solving. Dirks (1999) found that trust influences motivation by channeling member’s energy into both work group process and reaching an effective level of performance. In other words, energy is channeled to problem A rather than problem B.

Communication (internal, external and closed-looped) has been found to be an important element in teamwork processes (Dickinson & McIntyre, 1997). Communication requires an active exchange of information between two or more people but does not have to be face-to-face. Closed-loop communication for example is a very specific communication exchange of information between the sender and receiver irrespective of the medium (Salas et al., 2005). Salas et al., (2005) found closed-loop communication to be important enough to identify it as being critical to teamwork. Studies by Brodeur (2006) also showed that although related to internal and external communication it requires separate consideration and awareness in the development of team cohesion and problem solving.
Basically, communication is a valuable link between the other constructs of teamwork (i.e., team members clearly stating their intentions to be adaptable or verbally providing backup to another team member). McIntyre et al., (as cited in Dickinson, 1997). McIntyre and Salas (1995) and Salas et al. (2005) identified closed-loop communication, a specific type of communication, as being critical to team performance. Internal and external communications are also essential to the success of problem solving. Internal communication is critical to the team existence and function towards a solution and external communication brings in additional knowledge needed to effectively problem solve. Of greatest importance is that the team member must be willing to provide information to others on the team using appropriate types of interaction whether it be closed-loop, internal or external dialogue and discussion (Dickinson & McIntyre, 1997).

Negotiation is separated from communication since like closed loop communication it performs a specific task in effective teamwork development and problem solving. Negotiation is the interaction through shared knowledge, arguing for positions, proposing solutions, and a strong interdependence where a unanimous decision rule usually applies. (Schei & Rognes, 2005). Many team studies have not looked at the effect on negotiation when some people on a team are working cooperatively while others have individualistic agendas (Schei & Rognes, 2005). In fact, DeDreu et al. (2000) found no studies at all on the subject. Cooperation is the foundation of negotiation and without it there will be no negotiated agreement among team members.

Negotiation is not compromise. It is the link between the effects of cooperation on relationship conflict resolution that is essential to an effective performance outcome (Poitras, 2005, p. 281). Schei and Rognes (2005) recently completed one of the first studies on team diversity related to cooperation and individualist orientation in the area of negotiation, and discovered that cooperators are “easily exploited by individualistic members” even if there is only one individualists on the team (p. 315-316).

This poses the problem that if team members are not cooperating as a team because a single team member is exploiting the others then team orientation can not occur. This in turn reduces the chances of the team working as a single entity and the desired “expert team level” can not be attained. For this reason alone, negotiation becomes a critical core variable in teamwork. All members must actively be involved in negotiation, in being part of developing the final outcome—an effective solution to the problem A under consideration.

Cooperative team members must become aware of the potential destructive action that is possible through the exploitation in the final solution outcome. They must develop negotiation strategies that enforce negotiation by “recognizing certain offensive ‘moves’ in negotiation and countering with specific ‘turns’ that will bring the individualist back into cooperation (Balachandra et al., 2005). Kirton (2006) provided the framework and practical application to this problem when he empowered teams to have certain obligations—to solve problem A effectively without permitting the development of a problem B. Team members with individual agendas constitute the development of a problem B. It is through awareness that exploitation can occur and understanding the “science of negotiation” that teams are able to follow through with necessary strategies to ensure team cohesion including the reeducation or removal of non-cooperative members from the team.

Shared vision involves the skills necessary to foster genuine commitment and enrollment rather than compliance within the group. A shared vision is not an idea although it may be inspired by an idea (Senge 1990). Instead, it is a belief or force of impressive power that builds commitment and caring of the team as a sense of commonality develops within the team and
“gives coherence to diverse activities” (Senge, 1990, p. 206). At its simplest level, a shared vision is the answer to the question, “What do we want to create?” (Senge, 1990). Drucker (1973) would add to this having team members ask themselves the questions, “what are business is; what the organization is here to do; where is it going; and who is the customer?” (p. 74-99).

Hare and O’Neill (2000) found in a study they did that team members frequently provide their personal vision, not a shared group vision. This again provides a look at the individualist that can damage team cohesion. The types of questions that Senge and Drucker suggest be asked of the team would bring the team back to developing shared goals which lead to shared vision. It becomes obvious that these questions must be answered, and a shared goal developed and verbalized among the members before the team begins to consider the problem they have been asked to solve. Senge (1990) agrees with this notion as he identified shared vision as “the first step in allowing people who mistrust each other to begin to work together.” For an international Extension team shared vision provides a commonality that can help lead to team cohesion. Senge has also identified shared vision as being responsible for the sustainability of the team when he says, “shared vision addresses one of the primary puzzles that has thwarted efforts to develop systems thinking in management by asking the question, “How can a commitment to the long term be fostered?” Since shared vision is that point far in the future that the entire team is striving to reach, commitment can be directed to that point using proper strategies and thus sustainability can hopefully be assured.

Shared team leadership is not a new concept. However, when looking at it with Kirton’s A-I theory as the framework, it changes slightly but enough to be significant to team dynamics. Kirton (2006) suggests that there must be a primary leader but this leader shares his power with the team members as necessary. The fact that the entire team has obligations also leads to an empowerment of the team as a whole not common in many other teams. The team leader has obligations just as the team does and is required to see that problem A is solved as effectively as possible and that no problem B develops. Solving team cohesion problems leads to team-wide shared leadership when for example an individualist threatens the team’s existence.

Leaders also may share their power based on the existing problem A that is under consideration by the team. For example, if the team leader is a high adaptor and the problem seems to require a transformational change the leader may share his leadership with a high innovator on the team who is better adapted to deal with transformational change.

Conclusions

Advancing communication technology has lead to globalization and greater complexity in problem solving. Knowledge teams have become critical to dealing with the complexity to find the best possible solutions to problems. Unfortunately teams are as likely to fail as they are to succeed and it is difficult to predict which ones will fail and which will succeed. And yet the success of these teams is critical to survival of international organizations as well as mankind as a whole. Recent research shows that teamwork is a core element in improving team cohesion. Diversity is also believed to be involved in the failure of team cohesion but studies often do not provide understanding of why they affect team cohesion. Cognitive style is a form of diversity that has seldom been included in diversity research although it has been studied in clinical psychology for over thirty years. It appears that an awareness of cognitive style, as a fundamental form of diversity could have important implications in predicting improved teamwork success. Kirton’s Adaption Innovation Theory, a well developed cognitive style theory
is used in this paper as a framework for understanding how cognitive style interacts with ten teamwork constructs.

**Educational Importance, Implications and Application**

The information provided in this paper has important implications in the successful use of International teams in solving complex problems. The discussion presented here provides a better understanding and awareness of the critical teamwork interaction that must exist in international teams. Of even greater importance is the introduction of the fundamental need to include cognitive style theory in the problem solving process, in particular Kirton’s Adaption Innovation theory, as the basis in team dynamics to increase team cohesion and manage and/or reduce the development of team conflict faced by international extension and global agricultural teams. This information can be used both to develop practical applications for teams as well as providing a theory and core teamwork constructs for continued research.

**References**


