# PROPORTIONAL PROCESS CONFLICT IN UNDERGRADUATE COOPERATIVE LEARNING GROUPS

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# ABSTRACT

The first purpose of this research was to determine if minimal training on the concepts and effects of relational, task, and process conflict would have an effect on proportional process conflict (Jehn, 2000) in undergraduate cooperative learning groups. Proportional process conflict is explained as the amount of process conflict in proportion to relational and task conflict and to the overall amount of conflict within the group. The second purpose was to increase knowledge about the cultural patterns and perspectives of undergraduate cooperative learning groups. The sample consisted of 68 undergraduate students from four classes of the same course at a Christian university. Two classes were given conflict training and two classes were not given the training. In order to obtain quantitative data, the Conflict Survey, with a Likert-type scale, was formed by combining questions from the refined Intragroup Conflict Scale (Pearson, Ensley & Amason, 2002) with questions from Shah and Jehn's survey (1993). The Conflict Survey was administered at the beginning, middle and end of the semesters. The Bales Interaction Process Analysis (Forsyth, 1983), informal interviews, and conversations were used to gather qualitative information. Results of the one-tailed *t*-tests showed no significant differences in the proportional process conflict between the undergraduate cooperative learning groups. The analyses of the Conflict Survey and the Bales Interaction Process Analysis indicated low amounts of relational, task, and process conflict in all of the cooperative learning groups. This indicates low levels of proportional process conflict in the cooperative learning groups. In contrast, informal conversations and observations revealed considerable relational and process conflict in some groups.

# CHAPTER 1

## *Introduction to the Study*

### *Statement of the Problem*

John Dewey, the father of American education, argued that schools have a vital role to play in a democratic society. The purpose of education, according to Dewey, was to prepare students to become effective citizens. Democratic society demands a type of relational living in which one's actions and decisions must be made with regard for the effects on other people. Dewey's vision of democracy challenges individuals to develop close relationships so as to understand the life and experiences of other members of society and to comprehend the weight of their actions on their own lives. Throughout Dewey's conception of democracy is a mandate to care for others (Brody & Davidson, 1998). During the 1930s, Dewey's philosophy was abandoned and the traditional method of teaching based on John Locke's philosophy became the norm. The structure of the classroom began to emphasize competition and individualism.

In classrooms today, students come from different ethnic and cultural groups and have a variety of socio-economic backgrounds. In addition, students have a wide range of cognitive styles, developmental stages and academic abilities. Their needs, motivations, and interests also vary (Lazarowitz, as quoted in Pederson & Digby, 1995). Children may not have the support and care from older children or adults that they may have had before the urbanization of America. They may not have been taught how to contribute to the family or the wider community. As a result, a substantial number of people are not able to maintain real connections with others. The current trend in society is alienation, isolation, and aggression that result in divorce, gang membership, violence (Futrell, 1996), and loss

of confidence in the ability to solve societal problems (Johnson, Johnson, Holubec, & Roy, 1984).

When students do not have the chance to learn how to be a part of collaborative teams and caring communities, there is a possibility that they will have great difficulty in the real work world. Most jobs, especially the more desirable, better-paying ones, require teamwork, communication, effective coordination, and problem-solving skills. Research has documented that "real understanding is a case of active restructuring on the part of the learner" (Fosnot, as quoted in Johnson, Johnson, & Smith, 1991a, p. 9). The American 2000 Secretary's Commission on Achieving Necessary Skills (SCANS) stated in a report in 1991 that an effective worker productively uses interpersonal skills such as being a member of a team, exercising leadership, negotiating, and working with cultural diversity (Allen, 1996).

Johnson and Johnson (1998a) noted that cooperative learning is now becoming a standard teaching method in classrooms. This may be due to the hundreds of studies that have shown that cooperative learning is better at improving academic performance, relationships, and psychological health than the traditional Locke system (Johnson & Johnson, 1998a) that endorses competitive and individualistic methods of learning. As students interact in cooperative learning groups, they engage in problem solving, inference making, investigation, resolutions of contradictions, and reflection. When students are taught to be active learners though cooperative learning, they become empowered to think and learn for themselves and they develop relationships with others. Relationships with others influence the attitudes and values students adopt. Whether students become antisocial or pro-social will depend a great deal on their relationships. In

today's culture, students will need to see situations from a variety of perspectives, develop autonomy, and learn to cope with adversity and stress (Johnson & Johnson, 1998a). Being an active member of a cooperative learning group empowers the students by making them feel strong, capable, and committed (Johnson et al., 1991a).

Social skills such as communication, decision- making, conflict management, and leadership must be learned and practiced appropriately (Kagan & Kagan, 1998) if a person is to be an effective member of society. Conflict management skills can be practiced in cooperative learning groups, as any group can be a hotbed of conflict (Jehn & Mannix, 2001). Conflict is usually viewed negatively, but without conflict, complacency in teams can occur and the development of teams or individuals can be seriously impeded (Capozzoli, 1999). In contrast, Mohr and Dichter (2001) maintain conflict is essential for a healthy group. According to Granad (2003), any organization that chooses to use a team approach must recognize, comprehend, and prepare for all types of conflict. The crux of team effectiveness centers on how teams manage conflict. High-performing teams are aware of all types of conflict and have methods for dealing with such issues (Amason & Thompson, 1995).

Conflict has been divided into three areas: relational, task and process. Relationship conflict is centered on such things as personal incompatibilities; animosity; annoyance between individuals; and disputes about social events, gossip, world news, political views, clothing preferences, and hobbies (Weingart & Jehn, n. d.; Amason & Sapienza, 1997). Task conflict concerns debates over facts (driven by data and evidence) or opinions (Johnson & Johnson, 1998a). Process conflict concerns differences about how

task accomplishment should proceed in the work unit, who's responsible for what, and how work should be delegated (Jehn, 1997b).

Jehn (1992) states that process conflict is associated with lower levels of group morale as well as with decreased productivity. The members in groups with high levels of process conflict perceived unfairness and, in general, the process conflict lowered performance by creating inconsistencies in task roles in the group, and generated time management problems that resulted in failure to meet deadlines. Jehn further found that the highest performing organizational work teams had moderately high levels of task conflict and little or no process conflict.

In another study, Jehn (2000) recognized that the type of conflict present in a group relative to other types present (proportional conflict composition) and the amount of conflict perceived relative to the amount perceived by other members (perceptual conflict composition) were critical to group functioning. Mannix (2003) maintained that many conflicts are not single-shot events. During repeated interaction, issues of learning, reputation, and relationships all have a cumulative effect on group process, performance, and conflict (Mannix, Tinsley & Bazerman, 1995). Jehn and Mannix's (2001) study helped to explain the effects of process conflict in groups as they shift and change over time. According to their findings, at the beginning of a group's interaction process conflict can be beneficial. Process conflict in the middle or late stages can disrupt or detract from the task focus. In the final stages of the group task, process conflict increases (Jehn & Mannix, 2001; Jehn & Bendersky, 2003). Results indicated that process conflict patterns in high-performing groups were significantly different from those of the low-performing groups.

*Purpose of the Study*

The purpose of this dissertation is two-fold. The first is to determine if minimal training on the concepts and effects of relational, task, and process conflict would have an effect on proportional process conflict in undergraduate cooperative learning groups. The second was to increase the knowledge about the cultural patterns and perspectives of undergraduate group members. The concept of this study was based on the theory of Mannix and Jehn (2004). They theorized that minimal training on the conflict types and the optimal conflict context can be quite effective in improving group performance. Temporal (Jehn, 2000) and proportional (Mannix, 2003) issues of group conflict have been the subjects of other studies. The researchers in those studies maintain that these issues should be considered when studying conflict in groups. These aspects of conflict have been included in this study. The writer's survey of literature in Chapter 2 suggests that there has been a vast amount of research on task and relational conflict (Rodheiser & Stevahn, 1998; Johnson & Johnson, 2004; Johnson, Johnson & Smith, 1991b; Johnson & Johnson 1998a) but very little is known about process conflict in college cooperative learning groups. Because of the increasing use of cooperative learning in college classrooms, it seemed important to contribute to the body of knowledge about process conflict. Chapter 3 of this dissertation is an explication of the methodology used to study process and proportional conflict in cooperative learning groups. Chapter 4 reports the results obtained from the study and Chapter 5 includes a summary and discussion of the results of the study.

*Research Hypothesis*

The specific research hypothesis for this study was: There will be a significantly lower proportional process conflict score for the group that had conflict training as compared to the group that did not.

Treatment A – received conflict training that provided a basic understanding of relational, task, and process conflict and their effects on group performance.

Treatment B – received no conflict training.

*Definitions*

Conflict - perceived incompatibilities or discrepant views among the parties (Jehn & Bendersky, 2003, p. 189).

Cooperate - to take the position of the other person through numerous forms of give and take, mutuality, and reciprocity (Brody & Davidson, 1998).

Cooperative learning - the process of teaching and learning in which the students learn from each other and teach each other while the teacher is not involved directly in teaching or controlling the class (Johnson, et al, 1991b; Boud, Cohen & Sampson, 1999).

Group dynamics - the study of the behavior of groups (Forsyth, 1983).

Process conflict - conflict about how task accomplishment should proceed in the work unit, who is responsible for what, and how things should be delegated (Jehn, 1997b).

Positive interdependence - the dual responsibility for learning the material and making sure that all in the group learn the material (Johnson, et al., 1991a).

Promotive interaction - individuals facilitating, encouraging, providing feedback, challenging, and influencing each other's efforts in order to reach the group's goals (Johnson, et al., 1991a).

Proportional conflict composition - the type of conflict present in a group relative to other types present (Jehn, 2000).

Proportional process conflict - the amount of process conflict present in a group relative to relationship and task conflict (Jehn, 2000).

Relationship conflict – these conflicts are centered on such things as personal incompatibilities, animosity, annoyance between individuals and disputes about social events, gossip, world news, political views, clothing preferences, and hobbies (Weingart & Jehn, n.d.).

Task conflict - this type of conflict concerns debates over facts (driven by data or evidence) or opinions (Johnson & Johnson, 1998a).

# *CHAPTER 2*

## *Review of Related Literature*

### *Historical Background*

Humans have inherent social natures. We are born into a group called a family. Through family and peers, we are socialized into ways of behaving and thinking. Almost all of our time is spent interacting in groups. We are educated and we work, worship, and play in groups. A group is defined as "two or more individuals who influence one another through social interaction" (Forsyth, 1983, p. 8). People think of themselves as being part of a group and they perceive of other people as not being a part of the group. Groups develop norms or cultures that identify and describe appropriate language, behaviors, attitudes, and values. They also provide criteria for judging the norms. Group members are expected to conform to group norms. Group members take on roles or behaviors that are expected of persons who occupy certain positions (Cragan & Wright, 1980; Fisher, 1980). How we interact with others and learn to interact in groups is the essence of being human. Usually, groups are formed for a common reason or goal. The history of mankind reveals that men have always pooled resources to accomplish common goals. Shared goals unify the group and motivate individuals to act interdependently as a unified system to improve the quality of life and satisfy the needs of members. These advantages could never have been achieved through individual efforts (Forsyth, 1983; Cragan & Wright, 1980).

One of the oldest concepts associated with human survival is working together in a cooperative manner. It is a deeply rooted set of values and principles that align overt principles with covert beliefs and attitudes. Cooperation involves the way we think,

speak, feel, and view others. The social capacity to cooperate with others means to take the position of the other person through numerous forms of give and take, mutuality, and reciprocity (Brody & Davidson, 1998). From very early in the history of mankind, cooperation has been valued in educational pursuits. The Talmud takes the position that, in order to learn, one must have a learning partner. Quinilian, in the first century, maintained that students could benefit from teaching each other. John Amos Comenius held this same philosophy of peer learning. In India, Andrew Bell incorporated a similar peer teaching system. In England, in the 1700s, Joseph Lancaster used students to teach other students and a Lancastrian school opened in New York in 1806.

In the early 1800s, the Common School Movement in the United States emphasized a process of teaching and learning in which the students learned from each other and taught each other while the teacher was not involved directly in teaching or controlling the class (Johnson, et al., 1991b; Boud, et al., 1999). Today, this method of teaching is known as cooperative learning. Colonel Francis Parker, during the last three decades of the 19th century, created a classroom atmosphere that was truly democratic and cooperative. He was superintendent of public schools in Quincy, Massachusetts, from 1875 to 1880. Over 30,000 visitors a year came to observe Parker's instructional methods of cooperative learning. American education was dominated by cooperative methods through the turn of the century (Johnson, et al., 1984; Johnson & Johnson, 1995).

John Dewey, "the Father of Education" (Webb, 2002, p. 1), also promoted working in groups. His primary contribution came from his focus on the process of learning rather than its content. He envisioned the classroom being a place where active learners worked in harmony with their environment. He argued that children should learn to live

democratically by experiencing the democratic process in the classroom. Life in the classroom should teach children to make choices and carry out projects collaboratively. The educational environment should teach students how to empathize with others, respect their rights, and to work together rationally (Brody & Davidson, 1998). He proposed that freedom of expression is a necessary condition for intellectual growth and that learning takes place as the individual discovers on his own and interacts with his environment. Teachers should serve as guides in the sense that they should be a source of stimulation and support for selecting activities, material, and experiences that will enhance learning. His philosophy was that the curriculum should focus on the occupations that serve social needs. It should encompass moral as well as intellectual goals (Cromwell, 2000). Unfortunately, Dewey's contributions, for the most part, remained on the philosophers' shelves instead of reaching into the everyday classroom (Schmuck & Schmuck, 1983).

The traditional classroom became the norm in the 1930s. The paradigm of teaching was based on John Locke's philosophy. He maintained that the student's untrained mind is like a blank sheet of paper. Teachers are to transfer information to students and the students are to memorize and recall the material for tests. Students are considered to be passive recipients of information. According to Locke's philosophy, relationships among students in the classroom and faculty should be impersonal. Fortunately, teaching is changing, based on the work of some very influential philosophers, theorists and educators (Johnson, Johnson, & Smith, 1995).

The method of teaching known as cooperative learning was virtually unknown 40 years ago, but now it is a standard educational practice in many classrooms in the United States, Canada, and many other countries (Johnson & Johnson, 1998a). In this paradigm

of teaching, students and faculty jointly construct. Students are active constructors, discoverers, and transformers of their own information. There are personal interactions among students in the classroom and also between teachers and students. The assumption is not that an expert can automatically teach but that teaching is complex and requires considerable training (Johnson, et al., 1991a). There have been separate but interrelated historical movements that have helped to form the current thinking and research about classroom group processes.

*Theoretical Background*

Jean Piaget (1896-1980) investigated cognitive processes from infancy to adulthood. His theoretical framework is unparalleled in depth and scope. According to Piaget, individuals assimilate information, perceptions, or experiences into existing structures if the information is understood. If the information does not fit into their understanding, the mind rejects it. The mind, if it is ready to change itself, will accommodate the information or experience. Continuity of cognitive growth is a process of developing new structures. The mind is constantly active. As the individual's schema or structures change and grow, the person is able to think at higher levels. Piaget maintained that the mind seeks equilibration or a sense of harmony and balance between assimilation and accommodation in an attempt to eliminate inconsistencies or gaps between the external reality and its internal picture of reality (Craig, 1989; Cromwell, 2000).

Lev Vygotsky, a contemporary of Piaget, believed that cognitive development is created by cultural stimuli. He maintained that all mental functions are created from cooperative efforts to understand and solve problems (Cromwell, 2000).

In the early 1900's, Kurt Koffka, one of the founders of the Gestalt School of Psychology, maintained that groups were "dynamic wholes in which the interdependence among members could vary" (Johnson & Johnson, 1998a, p. 11). In the 1920s and 1930s, Kurt Lewin and his students are credited with setting the tone for taking Dewey's theory and refining Koffka's notions and applying them to the classroom (Schmuck & Schmuck, 1983). Lewin, his colleagues and his students have been the chief promoters of experiential learning in the area of group theory and group skills (Johnson & Johnson, 1975). Group dynamics is the term Kurt Lewin coined in 1943 for the study of the behavior of groups (Forsyth, 1983), and he is considered to be the father of group dynamics (Cragan & Wright, 1980).

Kurt Lewin was a student of early Gestalt psychologists who were more concerned with perception and learning than groups. Lewin applied many of their Gestalt concepts to the study of groups. In a group context, his holistic perspective maintained that groups could not be studied in a piecemeal manner because groups were "dynamic wholes." He provided the first coherent explanation of groups in what has come to be called "field theory."

Field theory was developed around the idea that "behavior must be considered to be a function of both the personal characteristics of the individual and the characteristics of the environment, an idea he summarized with the formula B= f (P, E)" (Forsyth, 1983, p.13). Field theory was not directly tested in many studies but it did much to explain the interrelatedness of the group phenomena and pointed to the conclusion that changes in one aspect of a group will cause changes to occur in other group features. It also provided a foundation for understanding group cohesion. Lewin thought that group members were

motivated toward the accomplishment of common goals by an intrinsic state of tension. The dictum of this concept argues that as individuals merge into a group something new is created. That new creation must be the "object of study " (Forsyth, 1983; Johnson & Johnson, 1995, p. 84).

In the late 1940s, Lewin's graduate student, Morgan Deutsch, formulated a theory of social interdependence that extended Lewin's reasoning. His theory included positive (cooperation), negative (competition), and no interdependence (individualistic). He also extended his theory to include trust and conflict as part of the dynamics of cooperative groups.

Gestalt psychology and field theory have been synthesized with systems theory. George Homans (as quoted in Cragan & Wright, 1980) developed a sociological theory of groups based on systemic concepts. The system theory explains, "A group as a system receives input from the environment, processes the information through internal communication, and then outputs its products." Groups are capable of formulating goals, working toward those goals, and being responsive to environmental feedback. Communication of information is a key concept in systems theory (Forsyth, 1983, p. 13).

Moreno was one of the first scholars to recognize the interpersonal dimension of groups and the effects that relationships have on the productivity of groups. He developed an invaluable tool for measuring the social relationships linking group members. The instrument is called a sociogram (Cragan & Wright, 1980; Forsyth, 1983).

*Application of Theory*

Understanding learning theories gives a foundation for understanding different orientations to research and practice in the classroom. Constructivist theory is based on

the work of Piaget. It assumes that puzzling problems will initiate an internal conflict and uncertainty. The students solve the problems through purposeful talk, collaborative arguing and reasoning. The focus is on social construction of knowledge (Rodheiser & Stevahn, 1998).

Sharon and Sharon (1976) rejected the view that the child is a passive learner and developed a rationale based on both Dewey's and Piaget's points of view. They maintained that the child achieves control over his environment by active participation. By planning and carrying out activities as group members, students learn to select achievable goals and carry them out on their own.

The social constructivist approach and the cognitive-development perspective of cooperative learning have combined Vygotsky and Piaget's theories with new research based on children's social and intellectual development. This research puts forward the idea that learning is greatly influenced by a child's developmental level and the child's cultural/ social environment. Thus a person's background, experiences, and interests will influence learning. The social constructivist approach creates an environment where children interact with fellow learners in order to build their own understanding. Teachers are encouraged to form learning groups that are heterogeneous with respect to race, gender, skills, and knowledge. The desired outcome is that the students will increase their ability to collaborate, and their thinking skills will be stimulated by different perspectives. The ultimate goal is to foster the child's intrinsic motivation to become a caring, responsible citizen with a desire to become a lifelong learner (Watson, Kendzior, Dasho, Rutherford, & Solomon, 1998).

Behavior learning theory, which had its beginnings with the work of Skinner, focused on how extrinsic reinforcers influence perceptions of interdependence and motivation to learn. Bandura studied imitation, while other behavioral theorists focused on the costs in social exchange among interdependent individuals and the balance of rewards (Johnson & Johnson, 1998a). The jigsaw approach (Aronson, Blaney, Stephan, Sikes, & Snapp1978) combined cooperative learning and individualistic work. The Teams-Games-Tournament (TGT) and the Student Teams-Achievement Divisions (STAD) combined cooperative and competitive methods (Slavin, 1988). These are examples of behavioral learning being used in the classroom.

Cognitive restructuring theory stresses the significance of linking information into existing cognitive structures. In order to increase long-term memory, the use of rehearsing, explaining, and elaborating are common techniques based on this theory (Rolheiser & Stevahn, 1998).

*Group dynamics*

In the early days of group dynamics, researchers employed simple observation techniques to learn more about group activities. But the issue of objectivity surfaced. The observers' beliefs and values often influenced their account of the group processes. Robert Freed Bales' work at Harvard formed the basis of most modern attempts to describe how small groups, as social systems, adapt and change. His equilibrium theory of problem-solving groups postulated that a group is constantly in the process of managing external and internal pressures (Frey, 1996). The groups have to maintain a balance between the task and the social dimensions of groups. Whereas field theory focused primarily on external forces, Bales concentrated on the internal forces. To study

these two dimensions, he developed his Interaction Process Analysis (IPA). It classifies each bit of behavior performed by the group into 12 categories. Categories 1 through 3 and 10 through 12 deal with socio-emotional activity: seems friendly, dramatizes, agrees, disagrees, shows tension, and seems unfriendly. These behaviors focus on interpersonal relationships in the group and encompass both negative and positive behavior. The remaining categories reflect task activity and encompass the give and take of opinions, information, and suggestions with a focus on the problem the group is trying to solve. Bales emphasized that group members develop major roles such as dramatizer, task leader, or overactive deviant. His work led to questions about developmental processes since he maintained that a group attempts to maintain equilibrium through three stages (Forsyth, 1983).

Researchers of group dynamics have long recognized the developmental stages and phases of groups. Many theories have attempted to describe the developmental changes in groups but most have taken either the recurring-phase model or the sequential-stage approach. The recurring-phase model maintains that the issues that dominate the group interaction in one phase can recur in a later stage. Theorists suggest that the group stages follow no consistent order.

Sequential stage theorists, on the other hand, will specify a typical order of phases of group development. Tuckman (1965) proposed a five-stage theory. During the initial stage, forming, the group members are becoming oriented towards one another. There is exchange of information and polite discourse. The second stage, storming, often finds the group members in conflict. Characteristics of this time include ideas being criticized and hostility. Increased cohesion and harmony develop in the norming stage. A “we” feeling

begins to develop. During the performing stage, the group focuses on achievement and productivity. Decision-making, problem solving, and increased cooperation, as well as decreased emotionality, are characteristic of this stage. Adjourning is the last stage. It is a time of termination of duties, reduction of dependency, and task completion. It can be a time of regret, increased emotionality, and disintegration.

From a therapeutic perspective, Covey and Covey (1992) also maintain that groups develop in a sequential manner. They have suggested that there is an initial stage when group members are highly suspicious of the group leader and have a fear of being manipulated. This resistance comes from fearful expectations that should be identified and discussed. At this stage, members are unwilling to take risks. A basic sense of trust and security must begin to develop in order for group members to express true feelings. The transition phase is much like what Tuckman described as the storming phase. There is anxiety, struggle for control, defensiveness, and conflicts among the members. Covey and Covey are careful to remember that there are no arbitrary dividing lines between group phases, and this is especially true of the movement from the transition stage to the working stage. Some groups never get to the working phase because they cannot master the major tasks of conflict management and establish trust between members. During the final stage of the group, members have the opportunity to clarify the meaning of their experiences in the group and to decide on what they have learned and how they will apply it to their everyday lives.

Poole and Roth (1989) also argued against innate and unitary phases in problem-solving groups. They maintained that decision-making groups follow multiple sequences, including cycles and recycles of certain activities such as conflict and solutions. Factors

such as complexity of the group structure and the type of task will affect the actual sequence of group activity. The researchers proposed that more insight might be gained from an examination of broader patterns of group interaction.

Gersick (1989) proposed such an approach to examining groups in terms of temporal patterns. His idea was that temporal phases emerge as bounded eras that are unique to each group. Phases do not necessarily progress in a hierarchically set order. In his work, high-performing groups acting under a deadline tended to stop work at the midpoint, assess the situation, and evaluate their work. They then either adopted new perspectives on the work before completing it, or they dropped the initial agendas at or near the midpoint. Building on that research, Waller, Zellmer-Bruhn and Giambatista (2002) found that groups working with changing deadlines paid significantly more attention to time than did those groups that had a stable deadline. In both groups, there was a transition at or near the midpoint of the time allotted.

McGrath's Time, Interaction, and Performance Model (TIP) (McGrath, 1991) focused on the relationship between time and performance. The model assumes that groups have multiple functions. Groups are involved in choice of goals, solution of tactical issues, policy choice, conflict resolution, and goal attainment. The model does not assume that all groups will go through all modes for all tasks. It does assume that groups will develop many forms of complex temporal patterning that will raise issues of scheduling, synchronization, and time allocation.

In more recent work, researchers (Jehn & Mannix, 2004) have incorporated temporal issues by recognizing team member heterogeneity as a critical predictor of group interaction processes. Members bring with them many differences during the early stage

of the group's life. These differences may include values and race. Stereotyping is common and it will influence group identity, team processes such as communication and conflict, and performance (Davidio, Kawakami, & Gaertner, 2002).

*Cooperative Learning*

Teachers' beliefs about cooperative learning have a great impact on what they do in the classroom. Brody (1998) presented a framework for understanding the teacher's beliefs regarding locus of control and authority, the nature of knowledge and knowing, and the teacher's role in decision making. Some teachers take a transmissional approach in which they believe the aim of education is to transmit facts, skills, concepts, and values. Cooperative learning is a tool to be used to help students master learning and review. The teacher is primarily responsible for all aspects of learning and the learning conditions. Knowledge, or knowing, in the transmissional belief system is logical. Covering the curriculum is more important than developing decision-making skills.

In the transactional orientation, the teacher considers cooperative learning as a means to foster higher learning levels of thinking and problem solving, and to encourage pro-social behaviors. The students share the responsibility for learning. The goal is for the teacher to assist the student to become more intrinsically motivated. In this belief system, knowing or knowledge is dynamic and changing. Teachers consider how cooperative learning affects the scope and sequence.

In the transformational orientation, learners should have as much control as possible over their own learning. It is the teacher's responsibility to link academic skills with all aspects of the student's life. The goal of knowledge is to transform society through community action as students and teachers are co-learners.

Teachers constantly are in the process of making decisions about how to teach. Their decisions should be based on teaching research. This would assure that the basic instructional system is as effective as possible for all students. Slavin (1883, p. 1) states that an essential element of the instructional system is "task structure." The "task structure" refers to the multiple methods of arranging classroom activities. Lecture, individual seatwork or group work, written or oral student responses, and frequent or infrequent-tests are just some of the methods available to teachers. In order to enhance competitiveness or cooperativeness among students, the teacher can use different methods of teaching that will empower the teachers to reach various educational objectives (Kagan & Kagan, 1998; Kagan 1989/90; Brandt, 1989/90). As students and teachers become more aware of the relationship between competition and cooperation, they "can change the existing, inequitable social structures" (Schniedewind & Sapon-Shevin, 1998, p. 208). Educators should know how and when to structure students' learning goals competitively, individualistically, or cooperatively.

Johnson and Johnson (1998a) recognize that cooperative learning has many variations based on different theoretical orientations, but they feel that their social interdependence theory, is by far the most important theory dealing with cooperative learning. It is based on the work of Lewin and Deutsch. The theory of social interdependence maintains that the manner in which interdependence is structured will determine how students interact with each other. This interaction structure largely determines the educational outcome. Structuring the classroom cooperatively results in promotive interaction. Competitive structures result in oppositional interaction, and individualist structures result in no interaction among students (Johnson et al., 1991a).

A competitive environment such as question-and-answer sessions encourage students to think they can only obtain their goals if the other students in the class fail to obtain their goals. Some students, when placed in a competitive situation, quit trying because they feel they cannot win (Johnson, 1984). In a competitive situation, members work to gain an edge on the other members, and they fear the possibility of losing. Social judgments, the way individuals feel about each other, are a result of either a process of acceptance or rejection (Johnson & Johnson, 1998a). Research reveals that competitive and non-interaction structures stimulate no communication, or communication that is dishonest or misleading. This lack of communication leads to a lack of cooperation. Egocentrism, stereotyped views of others, low self-esteem, expectations of unpleasant and distasteful interaction with others, and failure and rejection are the results of lack of cooperation (Gibb, as quoted in Johnson & Johnson, 1975; Johnson et al., 1991a; Johnson & Johnson, 1998a).

Simple assignments involve simple procedures and information that can be accomplished by a student working alone. When teachers structure lessons so that students work by themselves to accomplish assigned goals, students are unconcerned about the achievements of the other students. They work on their own goals at their own speed. Students value only their own efforts and success. Individualistic attitudes tend to be related to emotional immaturity, self-rejection, and social maladjustment (Johnson & Johnson, 1998a).

Cooperation is not merely having students sit side by side or having more advanced students assist slower students in the completion of assignments, or having one student do all the work while all the others get the credit (Johnson et al., 1984). Working together to

accomplish shared goals is the essence of cooperation. Cooperative group learning, collaborative learning, peer-directed learning, or small group work are interchangeably used terms to define the process of teaching and learning in which the students learn from each other and teach each other. The teacher is not involved directly in teaching or controlling the class (Johnson et al., 1991b; Boud, et al., 1999). The group members work interdependently on a clearly assigned task in a group small enough that everyone can participate (Johnson et al., 1991b). The aim is to improve thinking skills and academic achievement and to facilitate social skills and social relations.

Cooperative learning can be applied to teach any assignment in any curriculum. According to some researchers (Johnson et al., 1991b), there are three types of cooperative learning groups. Formal cooperative learning groups are used to teach specific content, informal cooperative learning groups ensure active cognitive processing of information during a lecture, and cooperative base groups provide long-term support and assistance for academic process. The combination of these structures can provide an overall structure for learning in the college setting. In formal cooperative learning groups, the teacher places the students in groups, teaches the content, and assigns a task to be cooperatively completed. The group is monitored and the teacher intervenes when collaborative skills or academic learning are needed. The teacher evaluates students' learning and she/he guides group processing or reflection.

To avoid the information passing from the professor's notes to the notes of the students while never passing through the mind of either, the use of informal cooperative learning is effective. Teachers can have students summarize what they know in focused discussions before, during, and after lectures. This helps set the mood for learning and

helps to set expectations on what will be covered in the lesson. By using this method of cooperative learning, students are cognitively processing the material. It also provides closure to the instructional session.

The third type of cooperative learning involves cooperative base groups. When a student enters into a large university or college and the subject matter is complex and difficult, it is important to have base groups. These groups provide the support, encouragement, and assistance needed in order to progress academically. These groups are permanent, lasting from one to four years. They tend to improve attendance as well as the quality and quantity of learning.

Brody and Davidson (1998) have noted 10 attributes that vary between the approaches.

1. The way that students are arranged into groups can vary. The groups may be arranged heterogeneously, randomly, by common interest, by the teacher, or student-selected.

2. Goals, tasks, roles, rewards, division of labor, and resources identify the value of and ways for structuring positive interdependence.

3. Approaches differ in the value that is placed on the teaching of group work skill such as communication, task skills, group maintenance, and relational/social skills.

4. The use of processing, reflection, or debriefing differs among approaches.

5. The value of team-building, or cooperative norms is valued differently in various approaches.

6. Low-status students' competencies are treated differently in varying approaches.

The communication patterns differ according to use of diverse group structures.

7. Some approaches rotate leadership responsibilities among students while others share the role of leader. Other groups do not designate the role of leader.
8. The teacher's role differs according to the phase of the lesson.
9. The value of equal participation varies.
10. Significance of interaction among students is different in approaches.

Studies concerning cooperative learning have been conducted by a wide variety of researchers from the time of the 1800s, with different settings, ages, and subjects. More is known about cooperative learning than about almost any other aspect of education. Cooperative learning has been found to be effective when new and complex knowledge and skills must be mastered through the use of creativity, problem solving, and the division of responsibilities. Further, when multiple perspectives are being studied the use of cooperative learning is beneficial. Hundreds of studies have documented that cooperative learning produces positive effects for students of all ages, in all content areas (Rodheiser & Stevahn, 1998; Johnson & Johnson, 2004; Johnson et al., 1991b). Johnson and Johnson (1998a) conducted a meta-analysis of the studies comparing cooperative, competitive, and individualistic structures. They divided their efforts into three broad categories: effort to achieve, positive relationships and psychological health. The studies have considerable generalizability because the research has been conducted in many different settings by many different researchers with markedly different orientations. Participants have varied widely as to race, sex, age, economic class, and cultural backgrounds. Also, a wide variety of research tasks and measures of dependent variables have been used.

In the effort to achieve category, according to the meta-analysis by Johnson and Johnson (1998a), cooperative learning produced higher achievement and greater retention than did competitive or individualistic efforts. The analysis of 375 studies concluded that average students in a cooperative environment performed two-thirds a standard deviation above students in competitive and individualistic situations. The college studies revealed about the same results. In addition, there seemed to be a trend toward greater willingness to take on difficult tasks and persist in those tasks. The students in cooperative situations developed superior levels of high-level reasoning skills, critical-thinking skills and meta-cognitive thought, creative thinking, verbal problem solving, spatial problem solving, categorization, and intrinsic motivation. There was also a greater transfer of learning from one situation to another, increased positive attitudes toward tasks, and more time on tasks.

Johnson, Johnson, Holubec and Roy (1984) suggest that there are specific skills needed to build deeper understanding of the material being studied. These skills stimulate higher reasoning abilities and ensure retention and mastery of the assigned material. Students should summarize out loud all important ideas and facts without referring to notes. They should seek elaboration by checking for accuracy and relate the new information to other knowledge. Mental pictures, or drawings of memory aids, should be employed. Cooperative learning encourages students to orally explain, summarize, and elaborate on the information. Studies support the conclusion that, as students convey information to others, the students are formulating, cognitively organizing, and systematizing their knowledge. As peers monitor and regulate the thinking and reasoning abilities of other group members, exploration of ideas is stimulated and meta-cognitive

skills are developed (Johnson et al., 1995). As students interact with others, they learn by internalizing social processes and use the processes to shape and reconstruct their understanding. This type of learning is strongly associated with achievement (Farivar & Webb, 1998).

According to Daempfle (2002), the majority of undergraduates are concrete reasoners and lack the advanced reasoning patterns needed to succeed in college courses. The concrete reasoners are unable to evaluate an argument based on its evidence. They are dualistic (right and wrong) thinkers. Higher-level reasoners, on the other hand, have the ability to generate and test alternative explanations. The higher-level reasoners can evaluate inconsistencies in their own thinking and can develop workable plans for accomplishing goals. Daempfle reviewed nine empirical studies to compare traditional methods of instruction with the use of inquiry-based, non traditional, collaborative instruction. His meta-analysis revealed that, while there are still many questions that arise and inconsistencies, the use of inquiry-based, non-traditional, collaborative instruction is strongly supported for the development of higher-order reasoning skills.

Not all studies find that cooperative methods are superior to traditional methods in achievement. Informal cooperative methods were incorporated in a college-level mechanics class. The lecturer posed questions in order to enhance the students' problem-solving and critical-thinking skills. The students were to think about the material in a wider sense and relate it to their own experiences. The findings indicated that no change in deep learning occurred. However, an increase in deep learning was not expected since most of the class had learning styles that cope well with traditional lectures. On the other hand, the changes were very effective in the affective domain. All the students reported

having enjoyed the experience. The researchers admitted that the *Hawthorne Effect* could have been a contributing factor (Booth & James, 2001).

Relationships among students and teachers are the second set of issues facing schools. In today's society, children may not have support and care from older children or adults. A substantial number of people are not able to maintain real connections with others. They may not have been taught how to contribute to the family or the wider community (Johnson et al., 1984).

Paul, a disciple of Jesus, experienced another situation that resembled our present-day condition. In the city of Corinth, sin abounded around 52 A.D. He wrote to the Corinthians about improving relationships. He said in I Corinthians 13:3 "if I deliver my body to be burned, but do not have love, it profits me nothing" (Arthur, 1977). He further talked about the evidence of love. Patience, kindness, and a lack of jealousy are experienced as people learn to love each other. Love causes people not to be a braggart, or arrogant, or to act unbecomingly. Love helps individuals not to be selfish, angry, or to take offense in a wrong suffered.

Cooperative learning situations have proven to be a place where love and care for others can be developed. Since 1940, more than 180 studies have found that cooperative efforts promoted better relationships than did competitive or individualistic efforts (Johnson & Johnson, 1998a). A group setting that promotes mutual goal accomplishment tends to result in frequent, open communication and accurate understanding of the other's perspective. As a result, students and teachers develop realistic social judgments of the other person and a sense of camaraderie. This camaraderie extends across racial and ethnic barriers. Since contemporary colleges are now experiencing an increasing number

of international and minority students, it is important to incorporate cooperative learning. The social support even extends to mental and physical disabilities (Slavin, 1988). This stimulates different perspectives, strategies, and approaches to completing assignments, as well as creative and divergent thinking (Johnson et al., 1995).

In today's culture, students will need to see situations from a variety of perspectives, develop autonomy, and learn to cope with adversity and stress. Small group and interpersonal skills, such as the ability to communicate, support others, manage conflict, divide responsibilities, use constructive criticism, give credit to others, and have a team spirit, are products of cooperative learning. Relationships with others influence social and cognitive development as well as the attitudes and values of students. Whether students become antisocial or pro-social will depend a great deal on their relationships.

Positive relationships increase the cohesiveness of the group. There is less absenteeism. Students tend to stay in school longer. They become more committed to the effort to achieve educational goals and to feel personally responsible for their learning. Morale becomes higher and the members are more willing to endure pain and frustration on the behalf of learning. They listen to and are influenced by students and teachers and commit to each other's success and learning. Such social support has been found in more than 106 studies (Johnson & Johnson, as quoted in Johnson & Johnson, 1998a). This is a factor that should be noted by college instructors since one half of all students who leave college do so during their freshman year (Terenzini, as quoted in Johnson et al., 1991b) and the major reason could be failure to establish a social network of classmates and friends.

In 1991, Astin completed a study at 159 baccalaureate-granting institutions. He was interested in finding out which environmental factors influenced a student's academic achievement, personal development, and satisfaction with schools. Two factors, interaction among students and interaction between faculty and students were by far the weightiest. Light (Johnson et al., 1995) concluded that the happiest and most successful college students arrange their time to include interpersonal activities with faculty members and fellow students.

There are numerous ways in which peer relationships contribute to social and cognitive development. As individuals interact with each other, they imitate behaviors and identify with those possessing admired competencies. Thus, peers shape social behaviors, perspectives, and attitudes. Many forms of pro-social behaviors, such as helping, comforting, sharing, assisting, and giving, can be developed in peer relationships. Conversely, behaviors that have negative consequences, such as drug use and delinquency, are related to perceptions of friends. Rejection by one's peers tends to result in aggressive and disruptive behaviors. Mother Theresa commented that the feelings of being unwanted and deserted are a bigger problem than leprosy or tuberculosis. In order for students not to experience loneliness, it is important for them to have others with whom to share their thoughts, feelings, aspirations, joys, and pains, (Johnson, et al. 1991a).

The third issue facing schools today is the psychological health of students, according to Johnson and Johnson (1998a). Goal 6 of the Goals 2000: Educate America Act was adopted by Congress and signed into law in 1994. It stated "by the year 2000, every school in America will be free of drugs and violence and will offer a disciplined

environment conducive to learning" (Futrell, 1996). Obviously those goals were not met. A sobering and sad fact is that in the United States the rate of suicides among young males is the highest in the world (Coleman, 1996). One possible solution to these and other mental health problems may be the use of cooperative learning. The meta-analysis conducted by Johnson and Johnson (1998a) found that cooperativeness is positively related to emotional maturity, well adjusted social relations, social competencies, personal ego strength, self-esteem, self-confidence, autonomy, the ability to cope with adversity, and more positive psychological adjustment. Students also have better attitudes toward teachers and school.

High levels of self-esteem seem to be desirable, as individuals with low self-esteem tend to set low goals for themselves and, thus, have low productivity. They lack confidence in their ability as they automatically assume that they will fail, no matter how hard they try. People who have low self-esteem look for flaws in themselves and others. Due to the feelings of awkwardness, self-consciousness, and vulnerability to rejection, they tend to be socially withdrawn. They can be easily persuaded, and influenced by criticism. Low self-esteem may cause the individual to experience more anxiety, nervousness, depression, insomnia, and psychosomatic symptoms (Johnson & Johnson, as quoted in Johnson et al., 1991a).

Kromrey and Purdom (1995) tested the effectiveness of three methods of instruction with undergraduate education majors. The lecture method, cooperative learning (using the jigsaw approach), and programmed learning methods were applied. In the programmed learning treatment, the students were given a self-instructional booklet. It was to be completed independently. No differences in achievement were noted across the

three treatments. However, the students' perceptions and attitudes in regard to the different treatments were significantly different. Ninety-seven percent of the students in the lecture and 90 % of those in cooperative learning felt they had a high level of achievement, while 28 % of the programmed learning perceived their mastery level to be less than satisfactory. Forty-seven percent of the students indicated that they liked the lecture method, while only 13 % of the cooperative learning and 14 % of the programmed learning indicated that they liked the methods. The students believed that the lecture method was superior to the other methods in promoting learning. The combination of methods that the students felt would be most effective was the lecture and cooperative learning.

Johnson and Johnson (1998a) listed five basic elements that make cooperation work: positive interdependence; individual accountability; promotive, face-to-face interaction; interpersonal and small group skills; and group processing. Strong positive interdependence is created when the students are put into situations that encourage cooperation instead of competition. Members must believe that they only succeed if others succeed - that they sink or swim together. Group members must maximize their own as well as the other group members' productivity. There is an atmosphere of sharing, assisting, explaining, and encouraging. The group must agree on the goal and they must understand the resources, roles, and task interdependence. Leadership is shared. The result is that the group becomes more than the sum of its parts. All students perform better than they would if they worked individually (Johnson et al., 1984; Rodheiser & Stevahn, 1998; Johnson & Johnson, 2004; Johnson & Johnson, 1998a).

The next element to mediating effectiveness of cooperation is individual accountability. This involves each person completing his/her share of the work. As each person's performance is assessed and the results are revealed to all members of the group, it becomes apparent which member is in need of more assistance. Also, it makes it difficult for members to hitchhike on the work of others.

Another element of cooperative learning is promotive, face-to-face interaction. This exists when students encourage, support, and assist each other's efforts to learn. Through cooperation, students become intrinsically motivated to strive for mutual benefit. Promotive interaction involves a public commitment in the accomplishment of the group's goals. This is accomplished as students provide efficient and effective assistance and feedback, exchange resources, and challenge conclusions and reasoning skills. In order to feel safe when disclosing their reasoning and information, they must trust the other members of the group to listen with respect. They must also act in a trustworthy manner by responding to the other person in such a way that ensures beneficial consequences (Johnson et al., 1991a).

Promotive interaction typically produces less stress and anxiety in learning and work environments. Anxiety causes an egocentric preoccupation with oneself, disruption with cognitive reasoning, and a tendency to avoid the fearful situation. Therefore, anxiety reduces productivity and positive interpersonal relationships. Even moderate levels of anxiety over an extended period of several years can cause psychological and physiological harm (Johnson et al., 1991a).

Group processing is an element of cooperative groups. It is accomplished as members reflect about relevant patterns in movement, designs, data, problems, principles,

and explanations. Good learners ask themselves open-ended questions to help find elusive answers. Reflective thinkers make connections by comparing and contrasting, considering different points of views, and relating shared information and ideas. They see the interdependence of things and integrate new information into their understanding and practice. They are able to articulate their findings in precise and concise ways (Cooper & Brody, 1998). This should be done at the end of each session in order to enable learning groups to facilitate social skills and to determine what could be done to make the group better.

The use of the Internet, the World Wide Web, and long-distance learning raise the issue of how effective is cooperative learning when it is used with computer-based training (CBT). Every element of cooperative learning can be benefited by the use of CBT. Because computers have the ability to connect many learners over great distances learning simultaneously, there could be increased group knowledge, dialogue, critical thinking skills, increased confidence, and higher achievement standards (Webb, 2002). Harasim (as quoted in Webb, 2002) reported increased interactions, intensity, and quality; better access to group knowledge, a more democratic environment; convenience of access; and increased motivation among students in an online graduate class.

The next element of cooperative groups is social skills according to Johnson and Johnson (1998a). Interpersonal skills such as communication, decision-making, conflict-management, and leadership must be learned and practiced appropriately (Kagan & Kagan, 1998). Communication, both verbal and nonverbal, is an essential ingredient of any social system. A group, no matter its size, will not exist without communication among its members (Fisher, 1980). Effective communication skills include active

listening (Carkhuff, 1993) questioning, testing assumptions and perceptions, paraphrasing and summarizing (Covey & Covey, 1992), clearly defining problems and issues, organizing ideas, negotiating, looking for alternatives, resolving conflicts, monitoring efforts, evaluating contributions from others, documenting, and adhering to the groups' ground rules and commitments (Cooper & Boyd, 1998). Skills that are needed to stimulate the intellectual curiosity and motivate students to reach for the highest quality solutions to problems or to resolve task or academic conflicts are the most difficult skills to master. Johnson, Johnson, and Smith (1991a) suggest that teachers should teach interpersonal and small-group skills so that their students can manage conflicts constructively. Students should be taught to focus on the best decision possible and to avoid the win-lose mentality. Ideas should be criticized, not people or their competence. Ideas are challenged and refuted but the student is not rejected. Likewise, the students need to be taught to separate their personal worth from the criticism of their ideas. Students should listen to everyone's ideas even if they do not agree with them. After all ideas have been heard, the group has many choices. The ideas could be integrated into one concept or they could add further information and implications in order to extend another member's conclusions, ask for explanations or justification for positions, use probing questions (" How would this work in other situations?" or "Why do you think …. ?" ), or generate several plausible answers as alternatives (Johnson et al., 1984). Rationality should be emphasized. Students should be taught to follow the golden rule of conflict:  Listen to other's ideas and perspectives if you expect to receive the same treatment. Individuals should try to understand opposing positions and when the evidence is convincing, be willing to change their minds (Johnson et al., 1991a).

In 2001, at the University of Queensland (Gupta, 2004), students were introduced to cooperative learning in a physical sciences course. The students were allowed to form groups of their choice. This reduced the possibility of pairing students who did not get along with each other because of personality clashes or self-image. The students rated themselves and their group members on individual contributions to the group work and projects. The researcher felt that this component of the learning experience was essential to account for individual efforts. The students found the cooperative learning experience educationally valuable and socially enjoyable. The researcher concluded that, for the first time in the physical sciences course, a feeling of community and togetherness was evident.

*Conflict*

The ability to resolve conflicts and controversy is an essential social skill and communication tool. There are many definitions of conflict. Steele (as quoted in Roark & Wilkerson, 1979) defined conflict as "a condition involving at least two parties who have a mutual problem of position or resource scarcity in which there is a behavior (or threat) designed through the exercise of power to control or gain at the other's expense. In the process of conflict, the established patterns of behavior among the involved parties are disrupted." (p.140). Jehn and Bendersky (2003) defined conflict as "perceived incompatibilities or discrepant views among the parties involved" (p.189). Intra-group conflict has been defined by De Dreu and Weingart (2002) as "the process resulting from tension between team members due to real or perceived differences" (p.3). Hostility differs from conflict in that it involves a hostile or antagonistic state of mind or attitude and need not involve a specific behavior (Roark & Wilkerson, 1979).

Tuckman (1965) examined 50 articles dealing with group development in different group settings. Based on his analysis, Tuckman constructed his widely known developmental model that includes five stages of group development: forming, storming, norming, performing, and adjourning. His model has been discussed in detail earlier in this chapter. His developmental model maintains that in intra-groups, conflict is intrinsic in the second stage of group development and an inevitable part of interpersonal relationships.

Research on conflict often parallels the rise and fall of concerns for societal unrest. In the 1960s, conflict research flourished. This was due to racial and student disturbances. During the '70s, conflict study began to wane, but in the '80s, there was renewed interest due to labor, community, and marital unrest. Research on concepts of conflict phases, productive and destructive conflict, distributive and integrative bargaining strategies, and tactics and face management demonstrate the claim that conflict theories have broad applicability at the interpersonal, inter-group, community, and international levels (Putman & Folger, 1988). Research on conflict in groups and teams has its foundation in the theories of negotiation (e.g., Pruitt, 1981) and conflict resolution (Wittenbaum, Hollingshead, Paulus, Hirokawa, Ancona, & Peterson, 2004).

Capozzoli (1999) identified different reasons for conflict in teams: diverse cultural values, attitudes, needs, expectations, perceptions, resources, and personalities. Different kinds of conflicts are being experienced as a result of more women, minorities, foreign nationals, and people with different experiential and educational backgrounds becoming a part of the work-force (Fiol, 1994; Williams & O'Reilly, 1998). Wilmot and Hocker *(*as quoted in Derkson, 2001) maintain that in interpersonal conflict "virtually all conflicts

arise over differences in content, relationship, identity and face saving, and/or process goals" (p. 255).

Pinkley (1990) has further researched the perception of conflict by group members. He maintains it might be difficult for group members to agree on exactly what is causing a conflict because each individual may experience or frame the same conflict quite differently. These frames are the lenses through which those in conflict view the conflict situation (Pinkley, 1990). These frames are dynamic, changing patterns. They are a combination of past experiences and current interactions during a dispute. As a result of the conflict frames, the individual has a particular reaction to conflict situations. Three dimensions of conflict frames have been identified: (a) emotional versus intellectual, (b) cooperate versus win, and (c) relationship versus task. The emotional/intellectual dimension addresses the degree of attention those in conflict pay to the affective component of a dispute. Hatred, anger, frustration, and jealousy are some of the feelings that some disputants experience. Other individuals focus on behaviors and actions. Cooperate/win is another dimension. It suggests that some people in conflict see both parties as contributing to the conflict and they focus on minimizing the benefit to both parties. Yet, others blame the other party and become determined to win or maximize their own gain at the expense of the other party. The third frame is the relationship versus task dimension of conflict, according to Pinkley. This frame is of particular interest to this study. A person who has a relationship orientation will most likely focus on interpersonal concerns and the relationship whereas those with a task orientation will concentrate on material aspects of a dispute. Material aspects would include such facets as money or resources.

Reviews during the past 50 years of organizational research suggest that conflict is detrimental to organizational functioning. Managers and employees overwhelmingly view conflict as a negative force. Conflict over differing viewpoints, task distribution, resource allocation, and relational problems have long been associated with poor group performance (Blake & Mouton, 1984; Wittenbaum et al., 2004; Evan, 1965; Gladstein, 1984). Schwenk and Cosier (1993) found that low-consensus groups were not as willing to work together again as those groups with higher levels of consensus. Wall and Nolan (1986) found that satisfaction was significantly lower in student task groups when equity issues, task-related goals and objectives, and personality differences resulted in conflict.

*Conflict Management*

Guttman (1999) maintained that conflict management is essential for high performance teams. He suggested four key elements that have the potential to turn conflict into healthy disagreements: (a) goals must be clear and agreed upon, (b) roles should be carefully delineated, (c) ground rules or protocols for group behavior must be established, and (d) personal styles of interaction must be understood and managed. The problem is that there are no set rules to suggest when conflict should be reduced, ignored, or encouraged. There are no clear guidelines to indicate how to deal with conflict in different situations. Even though conflict is said to be functional in some situations, most recommendations relating to conflict still fall within the spectrum of conflict reduction or resolution. Rahim (2002) suggested that conflict must be managed as opposed to resolved. Negotiation, bargaining, mediation, and arbitration fall into the conflict resolution category. Management of conflict involves designing effective strategies to

reduce the dysfunctions of conflict and enhance the constructive elements of conflict in an effort to enhance learning and effectiveness.

A major objective of managing conflict in contemporary organizations is to enhance knowledge acquisition, knowledge distribution, information interpretation, and preservation of information for future use and access. Argyris and Schon (1996) discuss two types of organizational learning: single-loop and double-loop learning. Single-loop learning involves diagnosis and intervention of problems without changing the existing policies, assumptions, and goals. Double-loop learning requires a change in the existing paradigm. According to the researchers, if conflict is to be managed instead of resolved, there must be double-loop learning. Members must learn to take responsibility for their decisions. Defensive behaviors, such as (a) bypassing errors and acting as if the errors had not been done, (b) making it so that no one can discuss the bypassing, and (c) making it so that group members cannot talk about the fact that they do not discuss errors, must be recognized and confronted.

Once the defensive behaviors have been managed, creative problem solving can be initiated. Problem recognition involves problem sensing and problem formation. The members of groups must make sure that they are trying to solve the right problem and they must implement the solution properly. In order to achieve this, group members and managers must look at problems from different perspectives, phrase the problem correctly, and think systematically (Rahim, 2002).

Researchers agree (Guttman, 1999; Rahim, 2002) that the knowledge of the styles of handing conflict is essential for a proper understanding of the nature of conflict management. Blake and Mouton introduced a two-dimensional model of interpersonal

conflict management styles in 1964 (Volkema & Bergmann, 1995). Much of today's research is based on their dimensions of concern for self-interest (assertiveness) and concern for the other party or relationship (cooperativeness). Jones and Pfeiffer (as quoted in Labovitz, 1980) divided the two dimensions into modes or styles: denial or withdrawal, suppression or smoothing, forcing or power, compromise or negotiation, and confrontation or integration. Thomas and Rahim (as quoted in Short and Greer, 2002) have also grouped the styles into five categories: obliging, avoiding, integrating, dominating, and compromising. The obliging style indicates low concern for self and high concern for others. It is also known as accommodating, smoothing, or yielding. The avoiding style indicates low concern for self and others. It can also be known as withdrawing or not acting. It reflects indifference to the concerns of either. Dominating is the third style. It indicates high concern for self and low concern for others. It is also known as competing, contending, or forcing. The compromising style indicates intermediate concern for self and others.

The integration style (also known as collaborating or problem solving) indicates high concern for self and others. There is an attempt to satisfy the needs of all parties. It is usually associated with cooperation, sociability, empathy, and good interpersonal skills. A study by Lawrence and Lorsch and a study by Filley (as quoted in Labovitz, 1980) concluded that high performance in organizations correlated positively with the use of integration management style. Labovitz (1980) listed strategies that relate to integrative conflict management. These strategies include accepting the goals of the other person, identifying the issues underlying the problem, framing the problem as a goal, placing the

problem away from a personal frame, and considering solutions apart from the problem statement.

Across a wide variety of studies and situations, integrating or problem solving has been the most effective management style (De Drue, Weingart & Kwon, as quoted in Bezrukova, Ramarajan, Jehn, & Euwema, 2003; Labovitz, 1980). Some research has found the combination of integrating and obliging management styles to be the most effective method.

In contrast to other research, Renwick (1975) studied the impact of the topic and source of disagreement on conflict management by obtaining information from 72 employees from two large manufacturing firms. No striking preference for methods of conflict resolution were observed when topics concerned organizational procedures. One study (Bezrukvova et al., 2003) found that employees did not have fewer problems when they brought into play accommodating, integrating, and compromising management styles.

*Types of Conflict*

Studies on the management of conflict have not only addressed styles. Some researchers have attempted to measure the amount and intensity of conflict and to explore the sources of such conflict. Jehn and Bendershy (2003) conducted a review of literature from multiple disciples and streams of research. Their research revealed that, while many think that conflict under any situation is destructive and should be stemmed immediately; others have found that, under some situations, conflict in groups can be beneficial. Conflict may enhance creativity, strategic decision making, performance, and inhibit "group think." An explanation for this discrepancy is that there are different types of

conflict with different performance results. While it is acknowledged that the different types of conflict are interrelated, three distinct types of intra-group conflict have been identified: affective or relational, task or cognitive, and process (Jehn & Bendersky, 2003; Jehn & Mannix, 2001; Jehn, Northcraft & Neale, 1999; Weingart & Jehn, n.d.). Rahim (2002) maintains that the proper diagnosis of the causes and effects of different types of conflict in organizations is an essential element for proper conflict management.

Affective (Amason & Mooney, 1999), relational (Jehn, 2000), and personal or people (Jehn, 1997b) conflict are terms that are used interchangeably to define issues that are not task related. Non-task conflicts are centered on such issues as personal incompatibilities, animosity, annoyance between individuals, disputes about social events, gossip, world news, political views, clothing preferences, and hobbies (Weingart & Jehn, n.d.; Amazon & Sapienza, 1997). Jehn (1997a) found that visible individual differences such as sex and age increase relationship conflict. This type of conflict often includes the occurrence of identity-oriented issues, such as beliefs and values, and evokes anger, frustration, and other negative feelings toward group members (Janssen, van de Vliert, & Veenstra, 1999).

Task (Jehn, 2000; Jehn, 1997b), task content (Weingart & Jehn, n.d.), or cognitive (Amason & Mooney, 1999) conflicts exist when group members have different information, perceptions, reasoning processes, theories, and conclusions (Johnson & Johnson, 1998a; Yang & Mossholder, 2004; Johnson et al., 1991a). A task conflict might revolve around an organization's strategic position or determining the correct data to include in a report (Jehn, 1997a). Conflict of this type concerns debates about facts (driven by data or evidence) or opinions. Task conflict may encourage greater

understanding of the issues being examined, higher retention of the subject matter, greater creativity in thinking, more communication of information, greater task involvement, higher quality problem solving, more positive relationships, more accurate perspective taking, and higher academic self-esteem (Johnson & Johnson, 1998a; Simons & Peterson, 2000). Task conflicts cause group members to begin to think more divergently or to search for more information to support their positions and result in beneficial situations (Johnson, et. al., 1984.)

In the past, task conflict was thought to be beneficial while affective or relational conflict was determined to be detrimental to group performance or effectiveness (Jehn, 1994, 1995). Team effectiveness may be defined in terms of three aspects. The first aspect is the extent to which the outcomes of the group meet individual and group-level performance. Another aspect is the extent to which teams develop commitment and cohesiveness. Commitment and cohesiveness enhance the probability that group members will want to work together again. Team satisfaction is the third aspect of effectiveness (Jehn, 2000).

Johnson, Johnson, and Smith (1991a) suggested that structured controversy in the classroom could yield highly constructive dividends. Other research suggested that teams that could use task conflict without provoking relational conflict seemed to be able to focus on the core issues of the problem, encourage creative thinking, and conduct open communication. They learned how to channel conflict to get the most beneficial aspects of conflict (Amason & Thompson, 1995).

Jehn (1997a) examined individual demographic characteristics, and intra-group conflict in order to predict the effect on objective performance (i.e., productivity of the

group that can be measured by objective criteria), perceived performance or how well they think they are doing in the group, and satisfaction or the degree to which members were happy working in the group. Her findings were consistent with the meta-analysis of research (De Dreu et al., 2003) that was conducted on associations between task conflict, relation conflict, team performance, and team satisfaction. Results revealed strong and negative correlations between both types of conflict and performance and group satisfaction.

Most studies have focused on team performance, but Amason (1996) investigated the influence of task and relationship conflict in strategic decision making teams. The results were similar to studies on team performance. Task conflict enhances decision making, and relationship conflict has a negative influence on team performance as well as on the satisfaction with the team, according to this study.

The third type of conflict is process conflict. Only recently have researchers incorporated it into their conflict models as a construct separate from task conflict. Process conflict is similar to constructs such as procedural complexity, as coined by Kramer, and distributive conflict, as described by Kabanoff (1991). Allocate, assign, direct, distribute, divided, duty, means, order, organize, plan, procedures, process, reorganize, responsibility, schedule, supplies, way, what, when, and who are key words found for the construct of process conflict (Jehn, 1997b). Jehn identifies process conflict as "conflict about how task accomplishment should proceed in the work unit, who's responsible for what, and how tasks should be delegated. Process conflict includes disagreements about assignments of duties or resources" (p. 7). When group members disagree about the data interpretation and meaning of the results, they are experiencing

task conflict. When they argue about who is responsible for writing up the final report and who will make the presentation, they are having process conflicts (Jehn & Bendershy, 2003).

There is no consensus in the empirical literature concerning the impact of process conflict on team performance or on the team members affective responses (Passos & Caetano, 2005). Pelz and Andrews (1966) determined that scientists performed well when they had colleagues who disagreed with them on the strategy for approaching a task. In Jehn's (1992) unpublished doctoral dissertation, process conflict was associated with lower levels of group morale as well as with decreased productivity. Her study with six organizational work teams found that, when a group argued intensely about who should do what, the task took longer to complete and members often wanted to quit or switch groups. The members in high-process conflict groups perceived unfairness, and in general, the process conflict lowered performance by creating inconsistencies in task roles in the group and generating time management problems that resulted in failure to meet deadlines. Jehn further found that the highest performing organizational work teams had moderately high levels of task conflict and little or no process conflict. Changes in job assignment and responsibilities were found to boost the group's productivity (Jehn, 1997b).

Granad (2003) investigated the effects of relationship, task, and process conflict on overall job satisfaction, cognitive job satisfaction, affective job satisfaction, and perceived performance. The participants in the study included 110 teachers and administrators who met regularly to manage and make decisions regarding their area of expertise. The intra-group conflict was measured with items from the revised intra-group

conflict scale developed by Jehn (1995). Two job satisfaction scales measured job satisfaction and affective job satisfaction. A five-point Likert scale measured the perceived performance. The results indicated that relational, task, and process conflict negatively affects overall satisfaction, cognitive satisfaction, and perceived performance. Conflict types did not affect affective job satisfaction. A two-way analysis of variance (ANOVA) was performed to examine possible interaction of relational and task conflict in regards to performance. The findings were significant. The low-task conflict groups had a higher mean perceived performance score than did the high-task conflict groups, regardless of the level of relationship conflict. The same analysis was conducted with task and process conflict. Again, a significant difference was found. The low-process conflict groups had a higher perceived performance than did the high-process conflict groups, regardless of the level of task conflict.

Jehn and Bendersky (2003) introduced the moderation categories of amplifiers, suppressors, ameliorators, and exacerbators "as a set of factors that differentially, but predictably, influence the relationship between conflict and group outcomes" (p. 214). Task interdependence, group diversity, acceptability, norms, and collaborative conflict management processes were classified as amplifier moderators. They each made the effects of task conflict more positive and the effects of relationship and process conflict more negative on group outcomes. Suppressor moderators weaken both the positive effects of task conflict and the negative effects of relationship conflict on group outcomes. For instance, discussion or debate over strategy for routine tasks that were being performed adequately decreased productivity. Likewise, rights-based conflicts, such as those that involve laws, contracts, or social norms, act as suppressor moderators.

Ameliorator moderators lesson the negative effects of conflict while the positive effects increase. Having a generally positive disposition or being in a good mood was considered an ameliorator unless the positive emotions interfered with judgment. Interest-based third party or mediator dispute resolution facilitates effective communication. It allowed disputants to vent relationship-based aspects of their conflict outside of the task group environment. This, according to the researchers, diminishes the relational conflict while the beneficial aspects of task conflict surface. Exacerbator, the fourth type of moderator, deals with the effects of negative emotions. Anger and rage and all subcategories of anger, frustration, tenseness, resentment, remorse, hatred, and scorn are just some of the negative emotions. Behavior manifestations include yelling, crying, banging of fists, having an angry tone of voice, and slamming doors. Exacerbators make the effects of task conflict less positive and the effects of relationship conflict more negative on group outcomes.

Jehn (1997b) identified four dimensions of conflict: negative emotionality, acceptability, importance, and resolution potential. Negative emotionality refers to the manifestations of affect. These behaviors are yelling, crying, banging of fists, slamming doors, and angry tones. Emotions are important when considering conflict, because group members have subjective interpretations of reality and reactions to current situations. This is in line with the research conducted by Pinkley (1990). Stress and threat are often associated with conflict. This increases the emotional responses and negative arousal. The data revealed that organizational members have relational, task, and process-related conflicts that can be highly emotional. No matter the type of conflict, all individuals who had emotional frames such as jealousy, hatred, anger, and frustration tended to work less

effectively because emotions oversimplify and overrun rational and instrumental reasoning (Thomas, 1992). In process and task conflict, this type of negative effect may be present without interpersonal animosity, but high emotionality leads members to lose sight of the task and focus. Defensiveness and blaming resulted, and the end product was poorer performance. She suggested that group members should understand the different types of conflict, as well as the consequences of negative emotions, in order to improve performance.

Acceptability, Jehn's second dimension, refers to the group's norms regarding how conflict is identified and approached. Some groups have an acceptance or willingness to talk about the conflict as a part of group-based processes while other groups refuse to acknowledge or deal with conflict. A team's acceptance of conflict increases the positive effects of constructive conflict (minimal task conflict), while it decreases the negative effects of destructive conflict on both performance and satisfaction.

The third dimension is importance. Some conflict outcomes are of great importance to the team's success, whereas other outcomes have only a minimal amount of impact on the success or failure of the team. The conflict is considered more important when the consequences are high.

Resolution potential, the fourth dimension, refers to the degree to which group members believe the conflict can be resolved. History of antagonistic relationships within the group, status differences among members, team socialization, potential costs, and the ability or inability to leave the situation were factors to be considered in resolution potential. The most resolvable conflicts were perceived as being low in emotionality and importance. Performance and satisfaction were positively affected when teams perceived

the conflict as being resolvable. Jehn found that process conflict could often be resolved by consulting a procedural manual or a group supervisor. Her research was some of the first research of its kind.

Most of the intra-group conflict research has focused on the influence of conflict on team outcomes. There are few studies that deal with the impact of intra-group conflict on the decision making process. Schwenk (1990) conducted a meta-analysis of literature that dealt with the effect of conflict on the decision making process. The literature suggested that conflict may stimulate systematic questioning, and thus may lead to a greater cognitive effort in decision making than the one reached without conflict. The functional theory of group decision making maintains that group interaction patterns, such as the ability to analyze problems, establish goals, and evaluate the positive and negative outcomes of solutions, can either promote or inhibit decision making (Gouran & Hirokawa, 1996).

Passos and Caetano (2005) conducted a study in Portugal. The purpose of the research was to test a model of effect of intra-group conflict (relational, task, and process), past performance feedback, and perceptions of team decisions-making effectiveness. Their results suggested that process conflict is negatively associated with the perceptions of team decision-making effectiveness. No evidence was found to support a relationship between task and relationship conflict and the perceptions of team decision-making effectiveness. This study used Jehn's Intragroup Conflict Scale (Jehn, 1995). The authors recognized that there might have been a concern with construct validity.

*Conflict and Diversity*

Diversity has several dimensions. There are inborn differences such as learning styles, types of intelligence, age, ethnicity, gender, physical abilities, and race. These dimensions are core elements of the person and may not be changed during one's lifetime. A secondary dimension can be changed. These dimensions include such categories as education, religious beliefs, military experience, geographic location, income, work background, and marital status (Vecchio & Appelbaum, as quoted in Appelbaum, et al., 1998). From this view of diversity, all groups should be considered diverse.

Management scholars are beginning to study the link between specific types of diversity and conflict. Jehn (1994) examined two dimensions of group culture: group value consensus (GVC) and group value fit (GVF). Values are the beliefs held by individuals such as being careful, innovative, adaptability, autonomy, and informality. GVF is the degree to which the content of the group's values and the ideas of the governing superior are similar. They found that high levels of GVC and GVF were associated with lower levels of relational and task conflict. Satisfaction was negatively correlated with task and relational conflict, while performance was positively associated with task conflict.

Shah and Jehn (1993) focused on determining conflict and interaction patterns among friend groups and acquaintance groups. The "friend groups were defined as strong interpersonal groups with close interpersonal ties and positive, amiable, preexisting relationships. Acquaintance groups were defined as weak relationships with limited familiarity and contact among members." (p. 150). They also examined the optimal levels of conflict for decision-making tasks and motor tasks that involved repetitive routine

behaviors. The results indicated that friend groups performed significantly better on both the motor and the decision-making task than acquaintance groups. Friend groups displayed more relational conflict on the decision making task than did acquaintance groups and significantly less emotional conflict on the motor task. They found that relational conflict and process conflict were negatively related to performance on the decision-making task and that task content conflict was positively related to performance. Performance on the motor task was lowered by both relational and task conflict. A hypothesis predicting a negative relationship between motor task performance and administrative conflict was not supported. Motor tasks are fast-paced, routine, and repetitive. They require minimal levels of conflict and a high degree of coordination among group members. The process data from this study revealed less conflict and more assistance among members of friend groups. Critical evaluation and questioning enhanced decision-making. Friend groups in this study asked more questions and were more critical of decisions than were acquaintance groups. Other studies suggest that conflict may be suppressed in acquaintance groups due to social norms (Mikula & Schwinger, 1978) and that conflict may be more accepted in friend groups (Argyle & Furnham, 1983). Shah and Jehn (1993) concluded friend groups may spend more time socializing but they also spend more time on task-related activities than did acquaintance groups. They also experienced more open communication and provided more moral support for each other than do acquaintance groups. Acquaintance groups tended to work more independently on both tasks.

Jehn, Northcraft, and Neale (1999) examined informational diversity, demographic diversity, and value/goal diversity. They discovered that different types of diversity

differentially affected group process leading to conflict. High levels of informational diversity created more task conflict. Emotional conflict was increased by social diversity and this tended to be detrimental to performance. Value diversity was positively correlated with task and emotional conflict.

Some research suggests that the impact of intra-group conflict on team outcomes may be influenced by the cultural values of a country. De Dreu and Weingart (2002) researched the moderator role of cultural values on the relationship between intra-group conflict, team performance, and team satisfaction. They found that the United States had weaker negative correlations than the Netherlands between task conflict and team performance, and task conflict and team satisfaction. In contrast, the negative correlations between relationship conflict and team satisfaction were stronger in the United States than the ones performed in the Netherlands.

Sosik and Jung (2002) found that the work teams of the United States tend to be individualistic while the Korean teams are considered to be collectivistic. The United States teams attained higher levels of group performance. The researchers suggested that the Korean groups may have focused more effort on building relationships among group members than on the task.

*Proportional and Perceptual Conflict*

Jehn (2000) recognized that the type of conflict present in a group relative to other types present (proportional conflict composition) and the amount of conflict perceived relative to the amount perceived by other members (perceptual conflict composition) were critical to group functioning. In management teams, proportional relationship conflict and proportional process conflict were negatively related to commitment,

cohesiveness, satisfaction, and individual performance. Task conflict was appreciated if not associated with relational or process conflict. Within a group that was dominated by task conflict, the research found that there was increased cohesiveness, group performance, and satisfaction. These findings support the theory that disagreements and challenging of assumptions are critical for innovation and change efforts.

In the study by Jehn (2000), perceptional conflict was also examined. Jehn reported that group members who had different understandings of the level of relationship and process conflict experienced less commitment. The individuals were less likely to feel that their team was cohesive or that they performed well individually or as a group. The correlation between performance and task conflict in management teams was significant and positive.

*Temporal Aspects of Conflict*

The classic Input-Process-Output (I –P-O) models or the system models of group dynamics that imply time sequence, temporal aspects, or patterns of conflict in groups as they shift and change over time have only recently begun to be studied by conflict scholars. Jehn and Bendersky's (2003) contingency perspective maintains that the time in the group cycle when a certain type of conflict occurs has a differentiating effect on the group's performance. In order to have high performance and creativity, a group should consistently have low levels of relationship conflict. Groups should have moderate levels of task conflict starting in the middle of the project and moderate levels of process conflict at the beginning. Their findings revealed that the relationship between process conflict and group outcome is complicated. Jehn and Bendersky predicted that process conflict would cause group members to claim and blame others for ideas, feel personally

attacked, and prime the feelings of unfairness and inequity. They maintained that it is critical for group leaders to be able to distinguish between the different types of conflict in order to enhance the functioning of a group and to improve performance.

Weingart and Jehn (n.d.) proposed that process conflict should be managed through collaboration. For a team to be collaborative, its atmosphere must support open communication, interdependence, reliance, trust, and a feeling that the team is able to perform the task.

Mannix (2003) maintained that many conflicts are cumulative. During repeated interaction, issues of learning, reputation, and relationship all have a snowballing effect on group process, performance, and conflict (Mannix, Tinsley & Bazerman, 1995). Generally, studies have revealed that, as group members gain experience with each other, they tend to routinize their behavior (McGrath, 1993). Thatcher and Jehn (1998) provided a model that integrated the temporal and I-P-O models. They took into account team members' heterogeneity as a critical predictor of group interaction processes. Combined with the individual characteristics such as race and value, the model also recognized that members begin to form views and stereotyping begins before interaction. These pre-group interactions influence other team interactions such as communication, conflict, and team outcomes (Dovidio et al., 2002). Jehn & Mannix (2001) defined group value consensus as the extent to which the potential members had similar values regarding work. Prior to forming the groups, in one study, the researchers measured individual-level values by administering the O'Reilly, Chatman, and Caldwells Organizational Culture Profile. Their results revealed that group value consensus predicted low levels of task, process, and relationship conflict at the middle and later phases of group

interactions. There was no significant relationship between group value consensus and conflict in the early stages of the group. This would imply that the value consensus might take some time to play out in groups. This would be consistent with Tuckman's (1965) theory (as discussed earlier in this paper) concerning the norming stage in which values regarding the task are discussed and consensus about task comes after the storming stage. It was noted that group value consensus made it less likely that groups would have any sort of conflict - even constructive conflict (Mannix & Jehn, 2004).

The study conducted by Jehn and Mannix (2001) revealed additional information on the temporal issues of conflict. Their research used 51 project teams composed of part-time MBA students. The three-person functioning groups performed comparable organizational tasks over a semester. The researcher's primary aim was to examine the link between certain patterns of conflict and performance. They also examined the values the members brought with them to the group. The weeks in the semester were divided into early, middle, and late blocks. The researchers maintained that successful task forces begin with a clear and engaging purpose. Once this was accomplished, the teams were left to focus on the procedural or administrative features of the task. Their findings revealed that higher-performance groups could be identified by a particular pattern for each of the three types of conflict. Relationship conflict started out low, remained low at the midpoint, but increased slightly toward the deadline. Task conflict started out at moderate levels, rose at the midline, and dropped back down toward the deadline. They found that process conflict was significantly different in high- and low- performing groups. At the beginning of a group's interaction process conflict can be beneficial. Such issues as deadlines, resources, working group norms, fair delegation, and responsibilities

can be agreed upon, accepted, and understood. Process conflict in the middle or late stages can disrupt or detract from the task focus. In the final stages of the group task, a group is often involved with editing and formatting a presentation, presenting a specific plan for implementation, and deciding on who is most qualified to present the findings. This is a time of increased process conflict (Jehn & Mannix, 2001; Jehn & Bendersky, 2003). Process conflict was lower in the early block when compared with the middle block for high performers. Results indicated that process conflict in high-performing groups increased significantly from the early to the middle to the late blocks. For the low-performing groups, process conflict was significantly higher at the beginning and at the end of the interaction, resulting in a U-shaped function. In an attempt to complement their examination of conflict in the group processes, Jehn and Mannix (2001) measured team trust, respect, open communication, and cohesiveness. They found that, during the middle time range, both relationship and process conflict were positively associated with low levels of trust and respect. On the other hand, task conflict was positively associated with open communication.

Jehn and Bendersky (2003) recognized that conflict could be both beneficial and detrimental in the organizational context. Their contingency perspective is that conflict should be encouraged and carefully managed in certain situations. In other situations, conflict should be discouraged or resolved as quickly as possible. They maintain that it is "critical for researchers and group leaders to distinguish between the types of conflict and to implement group interventions that pertain to specific types of conflict" (p. 225). Training and intervention are often ignored in I-P-O models (Mannix & Jehn, 2004) even though interventions have been theorized to reduce process loss within group activities

(Hackman, 1987). Another study (Mannix & Jehn, 2004), was conducted to measure input, process, and output variables over time. It incorporated a training and intervention variable into the design of the experiment. In this study, second-year full-time MBA students, who were enrolled in a 12-week managerial negotiation course, were used as the sample. The students were divided into 28 teams of three members each. Over the course of the semester, the team participated in three rounds of negotiation simulations. Round one took place in week five of the course. Round two took place during week seven, and round three took place in week 10. The researchers focused on team interactions, and on inputs by measuring the details of team diversity (gender, age, ethnicity, and functional background). In addition to group value consensus, the researchers were interested in distinguishing the effects of objective versus perceived factors. They recognized that perceived similarities might affect interactions in the early processes, while objective similarities might come into play during the later weeks. They wanted to more fully understand emergent states. Emergent states are the qualities of a team that represent member attitudes, values, and motivations (e.g., collective efficacy, trust, inputs, and cohesion). Emergent states can be viewed as both inputs and as products of team experiences. Processes were considered to be such things as task procedures, conflict, and communication. A group process intervention was given to half of the teams. This short lecture on team effectiveness included a discussion of the potential assets and liabilities of teams. They were also given a checklist that stressed the benefits of constructive, task-based conflict, and the detriments of relational conflict. The remaining teams were given no team intervention.

The findings indicated that two types of diversity – age and ethnicity – decreased open communication and increased process conflict during Round 1. The team effectiveness intervention resulted in more open communication during Round 1. In Round 2, a direct effect of the intervention was evidenced on the emergent states. There was an increase in trust and respect. Process conflict was decreased and process conflict resolution was increased. Their results suggest that process patterns that begin with open communication leading to low levels of process conflict, and high levels of process conflict resolution, trust, and respect can lead to higher performance in certain types of groups. Several variables (task and relationship conflict, actual group consensus, and group cohesiveness) that have been important predictors of performance in similar studies did not emerge in this study.

*Summary*

In summary, preparing students to be effective members of a democratic society involves making sure that classroom experiences are more reflective of the increased interdependence in the world and the real work environment. The ultimate goal of education should be to help students have a high quality of life while they are in college and when they leave. Cooperative learning has proven to be an effective teaching strategy that enhances achievement, social skills, and psychological health. Conflict will be a part of life, and conflict management has been the subject of research for many years. Past theories have considered all conflict in groups to be associated with poor performance. There is debate about the pros and cons of conflict as three distinct types of intra-group conflict have been identified. Empirical studies have found that relational, task, and process conflict have their own differential effects on group performance. Temporal

issues of conflict will make a difference in performance. Process conflict has been the subject of fewer studies than relational or task conflict. Many questions still lie unanswered in the search to understand how groups can improve group performance by reducing process conflict. Some research suggests that training and interventions would increase the constructive conflict and decrease the negative influence of conflict. The next chapter in this dissertation, Chapter 3, describes the methodology used in this research. This study attempted to shed more light on process and proportional conflict in undergraduate cooperative learning groups to increase the knowledge about the cultural patterns and perspectives of undergraduate cooperative learning group members.

# *CHAPTER 3*

## *Methodology*

A combination of quasi-experimental and survey methods was used in this study that took place at a four-year Christian university located in the central part of Virginia. The initial thought for the methodology of the study came from three sources. First, Jehn and Bendersky (2003) suggested that group members should be trained to identify the differences in the three types of conflict and their effect on group performance. As a result, the researchers thought that the training would make a difference in the levels of conflict. Second, Jehn (2000) recognized that the type of conflict present in a group relative to other types present (proportional conflict composition) was critical to group functioning. In management teams, proportional relationship conflict and proportional process conflict were negatively related to commitment, cohesiveness, satisfaction, and individual performance. The third reason was that researchers (Mannix, 2003; Jehn & Mannix, 2001) have recognized the importance of examining the patterns of conflict in groups as they shift and change over time. Consequently, this study examined the effects of training about the differences and effects of relational, task, and process conflict on proportional process conflict in cooperative learning groups of four classes of undergraduate students over the period of a 16-week semester. The researcher further wanted to gather information about the perspective of the students in their natural cooperative group setting. During this ethnographic case study, numerical data was obtained through the use of the refined Intragroup Conflict Scale (ICS) (Pearson, Ensley, & Amason, 2002) and the conflict scale developed by Shah and Jehn (1993). Non-

participation observation occurred with the aid of the Bale's Interaction Process Analysis (IPA). Informal interviews and conversations were also used.

*Sample and Participants*

The undergraduate students were enrolled in the course, Teaching Elementary Science. The same instructor taught all four classes. Two classes were taught in the fall semester of 2005 and two classes were taught in the spring semester of 2006. In the fall, one class contained 19 students and the other nine students. In the spring, 26 students were in one class and 14 in the other. In the sample of 68 students, there were two White men, two African American women and two Asian women. All of the other students were White women.

The students were informed by the instructor that a doctoral student wanted to conduct a study utilizing their class and that the subject of the study would be groups. They all volunteered to be a part of the study (Appendix D).

*Course logistics.*

The class, Teaching Elementary Science, was described as an analysis of trends and practices of teaching science in the elementary school. An emphasis was made on how to transfer theory into practice through preparation of activities and materials appropriate for the elementary classroom. The classes met for one and a half hours during each of the 16 weeks of the semester. Course requirements and learning outcomes consisted of two individual assignments, one paired assignment, and two group assignments.

The first group assignment (Science in the Bible) was designed to allow the students to see how and where science is found in the Bible. Groups were given the opportunity to choose one division of science as their topic. Each group searched the scriptures in the

Bible to find references pertaining to their topic, and they then made a presentation to the class.

The second cooperative group assignment (the Life Science Experiment) was to be conducted and designed by the students as an experiment to determine the effect of a chosen variable (or variables) on plant growth. The experiment allowed the students to use information that they had learned during the semester to design and carry out a scientific investigation. It was the summative assignment of the course. By conducting the experiment, the students had opportunities to make observations, classify variables, measure changes, predict results, infer causes of results, and communicate findings. The experiment should have included a title, a short literature review, a full description of the experimental design, a hypothesis, a listing of all variables, a log of observations, a graph of results, a conclusion based on their observations, and a description of how those conclusions related to the hypothesis. The task specialization or a description of the role of each group member was required. It was suggested that each student be responsible for two of the following tasks: obtain the pots and soil; obtain the seeds and other materials; keep a log of the plant growth; write a report of the results; graph the growth of plants; determine and describe possible treatments; describe all manipulated, responding, controlled, and extraneous variables; and present the final report to the class. Each student was evaluated based on his or her individual contribution as well as the quality of the project as a whole.

*Design and Procedure*

Convenience or cluster sampling was the method used to select the subjects. Treatment A group consisted of 35 students. They received the training on conflict types

(independent variable). There were 33 students in the Treatment B group and they received no training on conflict types. All four groups received instruction on cooperative learning. The instructor decided that the smaller class in the fall would receive the training on conflict types and the larger class would not receive the training. In the spring the larger class received the Treatment A and the smaller class received Treatment B. The students were not asked about their knowledge of conflict types prior to the research. The conflict survey was given at the beginning, middle, and end of the semester in an effort to access the temporal effects on proportional process conflict. The IPA was used during the cooperative learning planning sessions. Informal conversation between the researcher and the students was another method used to ascertain the students' reactions to the experience.

*Training*

Within the first two weeks of the semester, the researcher conducted the conflict training. She informed all the students about cooperative learning (Johnson & Johnson, 1991). At the beginning of the class, the students were asked how they thought a classroom should be structured to assure success in a student's career; in the interdependent, conflicting and changing world; and in relationships, families, care of others, and being a contributing citizen. Microsoft PowerPoint slides were used to compare traditional methods of teaching, also known as John Locke's philosophy (Johnson & Johnson, 1998), and cooperative learning. A paired discussion for two to three minutes revealed how each person could relate to the different paradigms according to his or her educational background.

The smaller class in the fall and the larger class in the spring (the Treatment A groups) divided themselves into groups to discuss social skills and prepare to perform a role play that demonstrated appropriate and inappropriate social skills. This introduced the subject of conflict as the students demonstrated disagreements in their role-playing. The class was divided into three groups. At that time the independent variable or conflict training was introduced. Each group was given a one to two page explanation of relational (Appendix C), task (Appendix B), or process conflict (Appendix A). Then the group made a presentation to the rest of the class about their assigned type of conflict. The students were then asked to pair themselves with a fellow student and prepare a sentence explaining all three types of group conflict. These sentences were read orally to check for clarity of the differences between relational, task, and process conflict.

The larger class in the fall and the smaller class in the spring were considered the Treatment B groups (control group). They broke into groups according to who was sitting nearby. They were given an assignment pertaining to the elements of cooperative learning. No mention of conflict types in groups was made except that conflict management is a part of the social skills needed during cooperative learning.

All classes participated in the group processing as a way to reflect on what could have been done differently or better in their groups. Taking notes during the group discussion, assigning roles, and staying on task were mentioned as ways that the students thought their groups could have been improved. PowerPoint slides were used to show the benefits of cooperative learning in the areas of achievement, relationships, and psychological health. It was concluded that teachers who structured their classrooms in such a way as to use cooperative learning could increase the probability that their

students would succeed in their careers; in the interdependent, conflicting and changing world; and in relationships, families, care of others, and being contributing citizens.

*Experimental Validity*

Internal validity (Gay & Airasian, 2003) is concerned with factors and threats other than the conflict training (independent variable) that affect the proportional process conflict (dependent variable). Internal validity threats were minimized due to the fact that each group or class had the same instructor, the same projects and requirements, worked together over the same amount of time, and met in the same classroom. Maturation could be considered a threat to internal validity as the students could have been learning to better manage conflict outside the classroom. They may have grown in the knowledge and use of Biblical principles on how conflict should be managed since they were in a Christian environment. Differential selection of participants most likely presented a low threat because the classes were apparently equivalent on all relevant variables. The only difference in the composition of the groups was due to the students' schedules.

*Instrumentation*

*Survey.*

The Intragroup Conflict Scale (ICS) was developed by Jehn (1995) to measure two theoretically distinct dimensions of conflict: relationship and task conflict. The ICS has been widely adopted by researchers as a measurement tool for group conflict (Pearson, Ensley, & Amason, 2002). Pearson, Ensley, and Amason (2002) refined Jehn's ICS during an attempt to improve the scale's construct validity and predictive validity of relational and task conflict. The refined ICS was used to measure relationship and task conflict. Process conflict was measured by using items from Shah and Jehn's survey

(1993). The combination of the refined ICS and the Shah and Jehn questions was used in this study to measure the amount and type of relational, task, and process conflict. For the purpose of this study, the combined nine questions that measured conflict were considered the Conflict Survey (CS).

The nine items that focused on the presence of conflict were rated on a five-point Likert scale anchored by 1 = "none" and 5 = "a lot." Three items measured relationship conflict: (a) How much anger is there among the members of the group? (b) How much personal friction is there in the group during decisions? (c) How much tension is there in the group during decisions? Three items measured the amount of task conflict: (a) How many differences over different ideas were there? (b) How many differences about the content of decisions did the group have to work through? (c) How many differences of opinion were there within the group? These first six items were from the refined ICS (Pearson, et al., 2002). The process conflict in the group was measured by using three items that were used by Shah and Jehn (1993). The questions were: (a) How often do group members disagree about who should do what? (b) How frequently do members of your group disagree about the way to complete a group task? (c) How much conflict about delegation of tasks exists in your group?

Pearson, Ensley, and Amason (2002) used a sample of 102 students at a major southeastern university to measure the level and type of conflict experienced by groups. The six items of the refined ICS were used to measure relational and task conflict. A confirmatory factor analysis was used to examine the construct validity of the six-item model. The results yielded a chi-square of 17.25, $p < .03$. A low chi-square would indicate that the actual and predicted input matrices were very much alike. A large chi-

square indicates that the observed and estimated matrices are quite different. All fit indices suggested adequate fit. The Cronbach alphas are the estimate of internal consistency based on how all items on the survey relate to all other items and to the total survey (Gay & Airasian, 2003). The Cronbach alphas were .73 and .86 for the task and relationship constructs respectively. Five other studies with teams of top management teams had similar findings.

In Shah and Jehn's (1993) study, the Cronbach alphas for process conflict were .83. The process construct meets the discriminate validity test at p .002 (Jehn, 2000). All the constructs pairs have been found to the discriminant-test at p <.0013 (Jehn et al., 1999).

*Observation.*

The Bale's Process Analysis (IPA) that was developed by Robert Freed Bales (Forsyth, 1983) was used as a way to observe verbal behaviors of individuals. In other studies, it has proven to be particularly useful and is a recognized observational technique (Forseyth, 1983; Millar, 1986). The structured coding system classifies each bit of behavior performed by group members into one of 12 categories. Three categories reflect positive socio-emotional activity or positive interpersonal relationships. Examples of these behaviors are: (a) seems friendly, raises other's status, gives help; (b) shows tension release by joking, laughing, and showing satisfaction; (c) agrees, shows passive acceptance, understands, concurs, and complies. Three categories reflect negative socio-emotional activity or negative interpersonal relationships. Examples of these behaviors are: (a) disagreement, shows passive rejection, formality, withholds help; (b) shows tension, asks for help, withdraws out of the field; (c) shows antagonism, deflates others' status, defends or asserts self, or seems unfriendly. The other six categories reflect task

activity. The task behavior encompasses the asking for and giving of information, opinions, and suggestions (Forsyth, 1983; Millar, 1986).

*Data Collection*

The following methods were used to validate the type and level of conflict within the group. The Conflict Survey was administered to the classes at the beginning, middle and end of the semester. The non-participant observer recorded her observations during the planning sessions by using Bale's Process Analysis. As the group interacted, the researcher placed a slash under the letter representing the student and beside the type of response. Informal interviews and conversations also took place between the students and the researcher.

*Data Analysis*

*Survey data analysis*.

In order to find the group's conflict composition, the raw scores for each student's nine responses on the Conflict Survey were averaged for each conflict type. Questions one, two, and three related to relational conflict. Questions four, five, and six related to task conflict, and the remaining three questions pertained to process conflict. (Example: One student circled the numbers 1, 2, and 2 on the three process conflict questions. Her process conflict scores were added for a sum of 5 and divided by three. As a result, her average process conflict score was 1.7. The scores were rounded to the nearest tenth.) Task, relational, and process conflict scores were all tallied in this way.

Proportional conflict composition describes the relationship among task, relationship, and process conflict (Jehn, 2000). It is explained as the amount of each type of conflict in proportion to the other two types and to the overall amount of conflict within the group.

In order to measure proportional process conflict, a ratio of the level of process conflict to the general level of conflict was assessed for each class. The process conflict score divided by the total of all the conflict scores reported on the Conflict Survey equaled the proportional process conflict score. In other words, if an individual reported a high level of process conflict (level = 5) and a low level of task conflict (level =2) and no relationship conflict (level =1), the proportional process conflict would be process conflict divided by process plus task plus relationship; or proportional process conflict would be figured as 5/ (5 + 2 + 1) = .633. This process was completed for each student for each of the three times that the Conflict Survey was administered.

The average proportional process conflict scores from all students in Treatment A (those having received conflict training) were averaged. The procedure was repeated for the Treatment B classes. As a result, one mean score was found for Treatment A on each of the three types of conflict and likewise, one mean score was ascertained for relational, task, and process conflict for Treatment B.

The *t*-test is an inferential statistic technique that is frequently used to determine if the means of two groups are significantly different from one another (Gay & Airasian, 2003). The proportional process conflict means for Treatment A and Treatment B were compared using the one-tailed *t*-test.

*Observation data analysis*.

The data from the Bale's Process Analysis was gathered by assigning each member of the focus group a number according to where he or she sat in the circle around the table. The utterances of each member were recorded in the column under his or her symbol and next to the categories that best described the utterance. The totals across the rows

reflected the total number of related statements for each category. Percentages were computed for each of the categories in an effort to describe the group's interaction.

*Overview of Design and Methods*

Quantitative and survey methods were used in this research. Four classes of undergraduate students were chosen through the use of convenience sampling. The classes (Teaching Elementary Science) were all taught by the same instructor and had the same group assignments. Two classes (Treatment A) were informed about relational, task and process conflict and their effects on group performance. Two classes (Treatment B) were not given the conflict training. In an effort to obtain quantitative information, the Conflict Survey, a combination of the refined Intragroup Conflict Scale (Pearson, Ensley & Amason, 2002) and Shah and Jehn's survey (1993) was administered to all the students at the middle, beginning, and end of each semester. A *t*-test was conducted to determine if the two means were significantly different from one another. The Bales Interaction Process Analysis (IPA) formal interviews, and conversations were also used as qualitative tools to determine the levels of conflict and the thoughts and feelings of the students.

# CHAPTER 4

## *Results*

The purpose of this research was two-fold. The first purpose was to determine if minimal training on the concepts and effects of relational, task, and process conflict would have an effect on proportional process conflict in undergraduate cooperative learning groups. The second purpose was to increase the knowledge about the cultural patterns and perspectives of undergraduate cooperative learning group members. The sample consisted of 68 undergraduate students from four classes of the same course, Teaching Elementary Science. The same instructor taught the classes at a Christian university in the southeastern part of the United States. Two classes were taught in the fall semester of 2005 and two classes were taught in the spring semester of 2006. One class in the fall and one class in the spring were given training about relational, task, and process conflict. The other two classes did not receive the training. Each student participated in a cooperative learning group during the semester. A Conflict Survey (CS) was administered at the beginning, middle, and end of the semester in order to obtain quantitative information about proportional process conflict. Non-participation observation of cooperative group planning sessions occurred with the aid of the Bale's Process Analysis (Forsyth, 1983). Informal conversations and observations were also used as methods to gain qualitative data.

### *Survey Results*

The combination of the refined ICS and the Shah and Jehn questions was used in this study to measure the amount and type of relational, task, and process conflict. For the purpose of this study, the combined nine questions that measured conflict were

considered the Conflict Survey (CS). The CS was a Likert scale anchored by 1 = "none" and 5 = "a lot." The Conflict Survey was administered to the Treatment A and B groups at the beginning, middle, and end of each semester. Consequently, three one-tailed *t*-test analyses were conducted using the data from the surveys. The analyses used a two sample unequal variance. A difference between two means is significant (at the given probability level) if the *t*-test value is greater than the critical p value. A probability of $p = 0.05$ (95% probability of making a correct statement) is usually acceptable for educational work. Results of the one-tailed *t*-tests were 1.317, 1.056, and -0.913, respectively. The means, standard deviations, and *t*-tests results that compared the levels of proportional process conflict among the Treatment A and B groups are shown in Tables 1, 2, and 3.

Table 1

*Conflict Survey 1 Responses*

| Group | Number of students | *t*-test | Mean | Standard Deviation | p = | Degrees of Freedom |
|---|---|---|---|---|---|---|
| A | 34 | | 0.321 | 0.049 | | |
| | | 1.317 | | | 0.097 | 59 |
| B | 27 | | 0.301 | 0.069 | | |

Table 2

*Conflict Survey 2 Responses*

| Group | Number of students | *t*-test | Mean | Standard Deviation | p = | Degrees of Freedom |
|---|---|---|---|---|---|---|
| A | 34 | | 0.322 | 0.061 | | |
| | | 1.056 | | | 0.148 | 58 |
| B | 26 | | 0.307 | 0.049 | | |

Table 3

*Conflict Survey 3 Responses*

| Group | Number of Students | *t-test* | Mean | Standard Deviation | p = | Degrees of Freedom |
|---|---|---|---|---|---|---|
| A | 37 | | 0.313 | 0.051 | | |
| | | -0.913 | | | 0.182 | 65 |
| B | 30 | | 0.324 | 0.049 | | |

*Observation Results*

One of the reasons for the study was to increase the knowledge about the cultural patterns and perspectives of undergraduate cooperative learning group members. The teacher randomly chose the cooperative learning group in each class that would be

observed throughout the semester by the researcher. The Bale's Interaction Process Analysis that was developed by Robert Freed Bales ( Forsyth, 1983) was used as a way to observe verbal behaviors of individuals. In other studies, it has proven to be particularly useful and is a recognized observational technique. The structured coding system classifies each bit of behavior performed by group members into one of 12 categories. Three categories reflect positive socio-emotional activity or positive interpersonal relationships. Three categories reflect negative socio-emotional activity or negative interpersonal relationships. The other six categories reflect task activity. The task behavior encompasses the asking for and giving of information, opinions and suggestions (Forsyth, 1983; Millar, 1986).

The data from the Bale's Process Analysis was gathered by assigning each member of the focus group a number according to where he or she sat in the circle around the table. The utterances and reactions of each member were recorded in the column under their number and next to the categories that best described their behaviors. The tallied totals across the rows reflected the number of related statements for each category. Percentages were computed for each of the categories in an effort to describe the group's interaction. The fall classes were observed two times during their planning sessions and the spring classes were observed four times. The lines in the cells of Tables 4, 5, and 6 that are in the columns under Observation 3 and 4 indicate that the fall classes did not have a third or fourth observation period. The professor gave the groups 15-20 minutes during class to plan their projects.

Table 4 reflects the number of times the students responded in each planning session with positive actions concerning task activities. The researcher acknowledges that there

were many behaviors that may not have been recorded due to the fact that many behaviors were happening at the same time within the group. When the students interacted by acting friendly with each other, raising other's status, giving help or rewards, joking or laughing, showing satisfaction, agreement, or understanding, the researcher made a mark in socio-emotional activity or positive interpersonal relationships category.

Table 4

*Positive Actions as Recorded on the Bale's Process Analysis*

| | Observation 1 | Observation 2 | Observation 3 | Observation 4 | Mean Responses |
|---|---|---|---|---|---|
| Treatment A- Fall | 11 | 2 | ___ | ___ | 6.2 |
| Treatment A- Spring | 11 | 5 | 0 | 2 | 4.5 |
| Treatment B- Fall | 4 | 5 | ___ | ___ | 4.5 |
| Treatment B- Spring | 6 | 7 | 2 | 0 | 3.75 |

Table 5 reflects the number of times the students responded with task behavior by giving suggestions, directions, opinions, analysis, or evaluation. The category also included times when the students expressed their feeling or wishes, gave information, repeated information, or clarified information.

Table 5

*Attempted Answers as Recorded on the Bale's Process Analysis*

| | Observation 1 | Observation 2 | Observation 3 | Observation 4 | Mean Responses |
|---|---|---|---|---|---|
| Treatment A- Fall | 31 | 4 | ___ | ___ | 17.5 |
| Treatment A- Spring | 15 | 37 | 8 | 11 | 17.5 |
| Treatment B- Fall | 8 | 8 | ___ | ___ | 8 |
| Treatment B- Spring | 23 | 29 | 15 | 4 | 17.5 |

Table 6 reflects questions about the task. Responses that were recorded in this category were when students asked for information, repetition, or confirmation. It also included when students asked for suggestions or direction. When students disagreed or showed passive rejection or withheld help, it was recorded in this category.

Table 6

*Questions as Recorded on the Bale's Process Analysis*

| | Observation 1 | Observation 2 | Observation 3 | Observation 4 | Mean Responses |
|---|---|---|---|---|---|
| Treatment A -Fall | 15 | 3 | — | — | 9 |
| Treatment A- Spring | 2 | 17 | 9 | 5 | 8.3 |
| Treatment B- Fall | 2 | 3 | — | — | 2.5 |
| Treatment B- Spring | 10 | 5 | 15 | 2 | 9.25 |

Negative and Mixed Reactions: Three categories reflect negative socio-emotional activity or negative interpersonal relationships. Examples of these behaviors are: (a) disagreement, shows passive rejection, formality, withholds help; (b) shows tension, asks for help, withdraws out of the field; (c) shows antagonism, deflates others' status, defends or asserts self, or seems unfriendly. There was one time when a group reacted to one of the group members with passive rejection

# *CHAPTER 5*

## *Conclusions, Discussion, and Recommendations*

### *General Summary*

A combination of quasi-experimental and survey methods was used in this study that took place at a four-year Christian university located in the central part of Virginia. The initial design for the methodology of the study came from three sources. First, Jehn and Bendersky (2003) suggested that group members should be trained to identify the differences in the three types of conflict and their effects on group performance. As a result, the researchers thought that the training would make a difference in the levels of conflict. Second, Jehn (2000) recognized that the type of conflict present in a group relative to other types present (proportional conflict composition) was critical to group functioning. In management teams, proportional relationship conflict and proportional process conflict were negatively related to commitment, cohesiveness, satisfaction, and individual performance. The third reason was that researchers (Mannix, 2003; Jehn and Mannix, 2001) have recognized the importance of examining the patterns of conflict in groups as they shift and change over time. Consequently, this study examined the effects of training about the differences and effects of relational, task, and process conflict on proportional process conflict in cooperative learning groups of four classes of undergraduate students over the period of a 16-week semester. The sample consisted of 68 undergraduate students from four classes of the same course, Teaching Elementary Science. The same instructor taught all four classes. Two classes were taught in the fall semester of 2005 and two classes were taught in the spring semester of 2006. One class in the fall and one class in the spring were given conflict training about relational, task, and

process conflict. They were considered the Treatment A group. The other two classes did not receive the conflict training. They were considered the Treatment B group. They were given an assignment pertaining to the five basic elements (Johnson & Johnson, 1998a) that make cooperation work: positive interdependence; individual accountability; promotive, face-to-face interaction; interpersonal and small group skills; and group processing. No mention of conflict types in groups was made except that conflict management is a part of the social skills needed during cooperative learning. Students in Treatment A and Treatment B participated in cooperative learning groups during the semester. The combination of the refined ICS and the Shah and Jehn questionnaire was used in this study to measure the amount and type of relational, task, and process conflict. For the purpose of this study, the combined nine questions that measured conflict were considered the Conflict Survey (CS). The CS was a Likert scale anchored by 1 = "none" and 5 = "a lot." The Conflict Survey was administered to the Treatment A and B groups at the beginning, middle, and end of each semester in order to obtain quantitative information about proportional process conflict. One-tailed *t* –tests were conducted in order to analyze to results of the surveys. The researcher also gathered information about the perspective of the students in their natural cooperative group setting. During this ethnographic case study, numerical data was obtained through the use of the refined Intragroup Conflict Scale (ICS) (Pearson, Ensley, & Amason, 2002) and the conflict scale developed by Shah and Jehn (1993). Non-participation observation occurred with the aid of the Bale's Interaction Process Analysis (IPA). Informal conversations were also transcribed.

*Conclusions*

The specific research hypothesis for this study was: There will be a significantly lower proportional process conflict score for the group that had conflict training as compared to the group that did not.

Treatment A group – received conflict training that provided a basic understanding of relational, task, and process conflict and their effects on group performance.

Treatment B group – received no conflict training.

The quantitative results about proportional process conflict that were gathered from the Conflict Survey were analyzed by conducting one-tailed *t*-tests at the beginning, middle, and end of the semesters. Proportional conflict composition describes the relationship among task, relationship, and process conflict (Jehn, 2000). It is explained as the amount of each type of conflict in proportion to the other two types and to the overall amount of conflict within the group. In order to measure proportional process conflict, a ratio of the level of process conflict to the general level of conflict was assessed for each class. The process conflict score divided by the total of all the conflict scores reported on the Conflict Survey equaled the proportional process conflict score. In other words, if an individual reported a high level of process conflict (level = 5) and a low level of task conflict (level =2) and no relationship conflict (level =1), the proportional process conflict would be process conflict divided by process plus task plus relationship; or proportional process conflict would be figured as 5/ (5 + 2 + 1) = .633. This process was completed for each student for each of the three times that the Conflict Survey was administered.

There were 34 students in Treatment A group and 27 students in Treatment B group who completed the conflict survey at the beginning of the semesters. When the results of the first Conflict Survey were subjected to a one-tailed t-test, no significant differences were detected between the groups ($t$=1.317, p=0.097). Thus, the research hypothesis was rejected. This indicated that there were no significant differences in the proportional process conflict levels between Treatment A and Treatment B groups at the beginning of the semester.

There were 34 students in Treatment A group and 27 students in Treatment B who completed the conflict survey at the middle of the semesters. When the results of the second Conflict Survey were subjected to a one-tailed t-test, no significant differences were detected between the groups ($t$= 1.056, p=0.148). Therefore, the research hypothesis was rejected. This indicated that there were no significant differences in the proportional conflict levels between Treatment A and Treatment B groups during the middle of the semester.

There were 37 students in Treatment A group and 30 students in Treatment B who completed the conflict survey at the end of the semesters. When the results of the third Conflict Survey were subjected to a one-tailed t-test, no significant differences were detected between the groups ($t$= -0.913, p= 0.182). Therefore, the research hypothesis was rejected. This indicated that there were no significant differences in the proportional conflict levels between Treatment A and Treatment B groups at the end of the semester.

Based on related studies, these are not the expected results for the study. Jehn and Bendersky (2003) have suggested that conflict levels would be lowered if group members

were trained to identify the differences in the three types of conflict and their effects on group performance.

It should be noted that the Conflict Surveys indicated very low levels of proportional process conflict in all four classes. Jehn (2000) found that conflict composition in teams that are characterized by low levels of all three types of conflict increases member commitment, cohesiveness, and satisfaction. However, these profiles are not positively correlated with performance. It was concluded that a complete absence of all types of conflict is not beneficial to group and individual performance. It also suggests that disagreement and challenging of assumptions is critical to improving the thought process.

A study by Watson and Marshall (1995) found that academically homogenous cooperative learning groups at the college level rated their experience more positively than heterogeneous groups. One student in this present study wrote a note on her Conflict Survey, stating that she felt that the lack of conflict in this class was due to the fact that all the students were education majors and were, thus, like-minded. In other classes with non-education major students, she had experienced a lot of conflict in cooperative learning groups.

The observational research was obtained through the use of the Bale's Interaction Process Analysis (Forsyth, 1983), informal conversations, and interviews. For the most part, only verbal responses in planning sessions were recorded, except when a student was treated with passive rejection when the other members of the group gave her "silent treatment." This was noted in the negative relationship category. Results from the non-participatory observation were displayed in Tables 4, 5, and 6. The positive social-emotional behavior category reflected when the students interacted by acting friendly

with each other; raising other's status, giving help or rewards, joking or laughing, showing satisfaction, agreement, or understanding. The results of the observations showed that the percentage of responses that reflected positive socio-emotional activity or positive interpersonal relationships for the Treatment A cooperative learning groups during the planning sessions was 16.4 %. The Treatment B groups communicated in this positive manner 15.7 % of the time.

The task behavior category, attempted answers, is shown in Table 5. The attempted answers category reflected when the students responded with task behavior by giving suggestions, directions, opinions, analysis, or evaluation. The category also included times when the students expressed their feeling or wishes, gave information, repeated information, or clarified information. This category represented 56.1 % of the communications in the planning sessions of Treatment A groups and 56.9 % of the responses in the Treatment B groups.

Table 6 reflects questions about the task. Responses that were recorded in this category were when students asked for information, repetition, or confirmation. It also included when students asked for suggestions or direction. When students disagreed or showed passive rejection or withheld help, it was recorded in this category. The percentage of responses that were in this category were 27 % for the Treatment A group and 27.4 % for the Treatment B groups.

During the second observation of the Spring Treatment A cooperative learning group, six members of the seven-member team were in attendance. This group was the only group to display disagreement about the task during the actual planning time. Five of the group members had disagreement statements pertaining to the task and the process. Four

of the members stated disagreement one time, and one member responded negatively two times. Task conflict may encourage greater understanding of the issues being examined, higher retention of the subject matter, greater creativity in thinking, more communication of information, greater task involvement, higher quality problem solving, more positive relationships, more accurate perspective taking, and higher academic self-esteem (Johnson & Johnson, 1998a; Simons & Peterson, 2000). Task conflicts cause group members to begin to think more divergently or to search for more information to support their positions and result in beneficial situations (Johnson, et al., 1984). No consensus has been made about process conflict and its effect on the group's performance. The combination of task and process conflict in this study resulted in helping the group to move forward in planning for the project and, therefore, the conflict was beneficial.

Another interaction that reflected process conflict was observed during an informal conversation. The group consisted of three women and one man. The male appeared to be well liked by the other group members even though he was often absent from class. He was only present for two of the observed planning sessions. There was one negative comment pertaining to the male student but it was not made during the planning sessions and not recorded on the Bale's Process Analysis. The male student was not present at the time of the comment. A female group member asked the other members not to assign the male student to an important item for the experiment and explained, "we will never get it." When asked by the researcher how she felt about the male student's behavior, she commented that it was " just easier to do things for him."

In another group, a female student was teased for being forgetful. She was instructed by them to write down the things that she should bring to class for the project.

Apparently, that student had forgotten to obtain something for a project in another class. The comment was made to the researcher in an informal conversation that " she skips a lot and that is why we pick on her." This group applied social pressure on the forgetful student in order to limit task and process conflict.

Three categories on the Bales Interaction Process Analysis reflect negative socio-emotional activity or negative interpersonal relationships. Examples of these behaviors are: (a) disagreement, shows passive rejection, formality, withholds help; (b) shows tension, asks for help, withdraws out of the field; (c) shows antagonism, deflates others' status, defends or asserts self, or seems unfriendly. There was only one occasion when a group displayed these negative relational behaviors during the planning session.

The cooperative learning group that experienced negative relational behaviors consisted of three White females students and one Asian female student. During the first project, the Asian member entered the class after the others had begun their presentation. She joined the others at the front of the classroom and presented her part of the project presentation. During the second observation, the Asian student came in late again to class. The three other group members did not acknowledge her presence or offer to inform her of what had been planned for the next project. In an informal conversation, a White member commented, "we work well together because we chose who we would work with and we knew who would be faithful." She looked at the Asian student and commented, "She was assigned to this group." The three White students were friends outside of class and were also grouped together in other classes. The Asian student commented that she liked "working individually." During the last day of class, she was

present but did not participate when the other group members made their final presentation.

The observations recorded on the Bale's Process Analysis during the planning sessions revealed that, for the most part, there was very little verbal conflict. The students in this research were allowed to form their own groups. Jehn (1995) realized that individuals tend to "avoid working with those with whom they experience emotional conflict." Logan (1986) found that problems might arise if groups are formed by the professors and not by the group members. The fact that the students chose to be in certain groups may explain the low levels of conflict.

Mannix (2003) maintained that many conflicts are not single-shot events. Repeated interaction, issues of learning, reputation, relationship, race, experience, and group value consensus could have had a cumulative effect on group process and conflict in the group with the three White members and one Asian member. This group refused to acknowledge or deal with conflict. As a result, the positive effects of task conflict, that the Asian member may have provided, were decreased and the negative effects of relational and process conflict were increased.

*Implications*

This present study concentrated on Jehn's (2000) recognition that it is important to understand the type of conflict present in a group relative to other types present. Jehn coined the term proportional conflict composition to describe "the relationship among the three types of conflict (relational, task, and process), as the level of each type of conflict proportional to the other two and to the overall level of conflict within the group, rather

than as an absolute level or amount of any one type" (p. 2). Proportional process conflict describes the process conflict in the group in relation to relational and task conflict.

The purpose of the study was to assess if there would be a difference in the proportional process conflict between the group of students who had received the conflict training and the group that had not received the conflict training. The Conflict Scale was used in this study to measure relational, task, and process conflict in cooperative learning groups. The Conflict Survey was administered at the beginning, middle, and end of each semester. The mean results indicated that there was very little conflict of any kind among the groups. This type of conflict profile is not positively correlated with performance (Jehn, 2000) because disagreement and challenging of assumptions or task conflict is critical to improving the thought process.

A one-tailed *t*–test was conducted in order to analyze the results of the surveys. The results indicated there were no significant differences in proportional process conflict scores between groups that had conflict training and those that did not, as indicated by the Conflict Scale. Therefore, the research hypothesis was rejected.

The Bale's Interaction Process Analysis (Forsyth, 1983) was used to record the non-participatory observation during the cooperative learning groups' planning sessions. Of the four groups who were observed, only one group experienced negative conflict. It was not possible to know all the causes of the conflict but some were apparent.

1.The three members did not choose the fourth member to be a part of their group.

2. The fourth member was considered an acquaintance and the other three members of the team were friends.

3.The fourth member did not adhere to the group value consensus of being on time for class.

4. The three friends did not have a willingness to talk about the conflict.

5. The fourth member preferred to work individually rather than in groups.

Two of the apparent causes involved relational conflict and three involved process conflict. The relational and process conflict resulted in lowering or eliminating any of the beneficial task conflict that the fourth member may have brought to the group.

It is important to remember that proportional conflict composition is at play in all groups. From these observations, it is evident that Jehn's (2000) suggestions are essential for understanding conflict in groups. Each type of conflict will influence the other types of conflict in the group. The different types of conflict are interrelated. The presence of one type of conflict changes the effect that a different type of conflict will have on group outcomes and processes.

Another implication drawn from this research is that it is important not to rely on just one source for gathering information. The information gathered from the Conflict Surveys indicated that the students in all the groups were experiencing very low levels of conflict. The non-participatory observations revealed that, indeed, there was more conflict than the students recorded on the Conflict Surveys. The information gleaned from the informal conversations provided valuable insight into the cause and types of conflict.

*Limitations*

This study may be limited because of the instrument used. The Conflict Survey was developed by combining three relationship conflict items and three task conflict items from The Intragroup Conflict Scale (Jehn, 1995) and three process conflict items from Shah and Jehn's survey (1993). The Conflict Survey was used to determine the levels of relational, task, and process conflict in each cooperative learning group. The mean scores from this Likert scale reflected very low relational, task, and process conflict in the cooperative learning groups. The Conflict Survey did not give an accurate representation of the conflict in some of the groups. Consideration should be given to using different assessment methods in future studies. Additional observers may have helped to verify the scoring of the interactions on the Bale's Process Analysis.

After observing the conflicts in the cooperative learning groups, the researcher realized that the study might have been limited because of the conflict training. Additional training was needed to help the students resolve their conflicts. Just knowing the types of conflict and their effects on group performance was not enough to help the students deal constructively with their conflicts. The students could have been informed that conflict was inevitable and expected, even in Christian cooperative learning groups. They results of the study might have been changed if the students had been trained in the process of problem-solving negotiation (Johnson & Johnson, 2005). Additionally, if the observer and the teacher had taken on the role of mediator as described by Johnson and Johnson (2005), the students may have dealt with their negative relational and process conflict in a more constructive manner and consequently, increased the positive task conflict.

*Recommendations for Future Research*

In future studies, a different tool could be used to assess the levels of each type of conflict in the groups. The conflict training could include the process of problem-solving negotiation and mediation. The researchers could observe all the planning sessions for one project and make the observations during the same week of each semester. The use of a video in a quieter environment would supply accurate observational data. Also, multiple observers would verify that the responses were being interpreted correctly.

It is recommended that this study could be expanded by utilizing cooperative learning groups who are experiencing high levels of proportional process conflict. Cultural and gender issues in cooperative groups could be addressed.

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# APPENDIX A

## Process Conflict

Process conflict has been defined as "conflict about how task accomplishment should proceed in the work unit, who's responsible for what, and how things should be delegated. Process conflict includes disagreements about assignments of duties or resources." When group members disagree about the data interpretation and meaning of the results, they are experiencing task conflict. When they argue about who is responsible for writing up the final report and who will make the presentation, they are having process conflicts (Jehn & Bendershy, 2003). Allocate, assign, direct, distribute, divided, duty, means, order, organize, plan, procedures, process, reorganize, responsibility, schedule, supplies, way, what, when, and who are key words found for the construct process conflict (Jehn, 1997a).

Process conflict has been associated with lower levels of group moral as well as with decreased productivity. A study with six organizational work teams found that when a group argued intensely about who should do what, the task took longer to complete and members often wanted to quit or switch groups. The members in high-process conflict groups perceived unfairness, and, in general, the process conflict lowered performance by creating inconsistencies in task roles in the group, and generating time-management problems that resulted in failure to meet deadlines. The researcher found that the highest performing organizational work teams had little or no process conflict.

Assignment: 20 minutes

1. Discuss process conflict and the research relating to it. How have you experienced it as you have worked in groups?

2. Prepare a 3-5 minute presentation on the subject of process conflict. Make sure that your classmates understand the concept of process conflict and its consequences on group performance. Choose one person to make the presentation.

# APPENDIX B

## Task Conflict

Task (Jehn, 2000; Jehn, 1997a), task content (Weingart & Jehn, no date), or cognitive (Amason & Mooney, 1999) conflicts exist when group members have different information, perceptions, reasoning processes, theories, and conclusions (Johnson, Johnson, 1998a; Yang & Mossholder, 2004; Johnson et al., 1991a). A task conflict might revolve around an organization's strategic position or determining the correct data to include in a report (Jehn, 1997b). Conflict of this type concerns debates about facts (driven by data/evidence) or opinions. Task conflict may encourage greater understanding of the issues being examined, higher retention of the subject matter, greater creativity in thinking, more communication of information, greater task involvement, higher quality problem solving, more positive relationships, more accurate perspective taking, and higher academic self-esteem (Johnson & Johnson, 1998a; Simons & Peterson, 2000). Task conflicts cause group members to begin to think more divergently or to search for more information to support their positions and result in beneficial situations (Johnson & Johnson, et. al., 1984.)

Assignment: 20 minutes

1. Discuss task conflict and how you may have experienced it as you have worked in groups.

2. Prepare a 3-5 minute presentation on the subject of task conflict. Make sure that your classmates understand the concept of task conflict and its consequences on group performance. Choose one person to make the presentation.

# APPENDIX C

## Relational Conflict

Affective (Amason, 1999), relational (Jehn, 2000), personal, or people (Jehn, 1997, September) conflict are terms that are used interchangeably to define issues that are not task related. Task-related conflict centers around debates about facts (driven by data/evidence) or opinions. Non-task conflicts are centered on such things as personal incompatibilities and disputes about social events, gossip and world news, political views, clothing preferences, and hobbies (Weingart & Jehn, n.d). Relational conflict often includes personality differences, animosity, and annoyance between individuals. Jehn (1997, October) found that visible individual differences such as sex and age increase relationship conflict.

In the past, academic research and in introductory textbooks, task conflict was thought to be often beneficial while affective or relational conflict was determined to be detrimental to group performance. Johnson, Johnson, and Smith (1991a) suggested that structured controversy in the classroom could yield highly constructive dividends. Other research suggested that teams could use task conflict without provoking relational conflict. The teams who were able to use task conflict without provoking relational conflict, seemed to be able to focus on the core issues of the problem, encourage creative thinking, and conduct open communication. They learned how to channel conflict so as to get the most beneficial aspects of conflict (Amason & Thompson, 1995).

Assignment: 20 minutes

1. Discuss relational conflict and the research in light of what you have experienced while working in groups.

2. Prepare a 3-5 minute presentation on the subject of relational conflict. Make sure that your classmates understand relational conflict and its consequences on group performance. Choose one person to make the presentation.

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# APPENDIX D

## Consent Form for Participation

You are being asked to participate in a research project that is related to cooperative learning. The completion of this study fulfills partial requirements for the researcher's dissertation project. As a participant in this study, you will be asked to complete a survey three times during the semester. The survey should take about three minutes to complete. Participation in this study is completely voluntary, and you may withdraw at any time. Participation involves no physical or psychological risks. All responses will remain confidential.

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_____I have read and understand all information provided above and agree to participate in this study.

_____ I do not wish to participate in the research project.

_____

Participant's Signature