

## **ABSTRACT**

MURPHY, JILL MARIE. The Effect of a One-Time Team Building Exercise on Team Cohesion when working with a NCAA Division I Women's Basketball Team. Dr. Aram Attarian, Committee Chair.

The purpose of this preliminary study was to measure the effects on a one-time team building exercise on team cohesion. A NCAA Division I women's basketball team participated in this study. The team building exercise used was a rescue simulation. The instrument used to measure team cohesion was the Group Environment Questionnaire (GEQ). The GEQ was administered one week prior and one week after the rescue simulation. The data was analyzed using Microsoft Excel with StatPlus. After analyzing the data, no significant changes were found between the pretest and posttest.

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**EFFECT OF A ONE-TIME TEAM BUILDING EXERCISE ON TEAM  
COHESION WHEN WORKING WITH A NCAA DIVISION I  
WOMEN'S BASKETBALL TEAM**

by  
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Chair of Advisory Committee

## DEDICATION

To all those who strive for continued learning and personal growth, today and  
always:

*“Life is my college. May I graduate well, and earn some honours!”*

Louisa May Alcott

## **PERSONAL BIOGRAPHY**

Jill Marie Murphy was born in the District of Columbia in 1970. She was an avid athlete growing up in Southern Maryland. After graduating from Thomas Stone High School in 1988, she attended Eastern Kentucky University on a field hockey scholarship. She graduated from Eastern Kentucky University in 1992 with a Bachelors of Science in Psychology and Physical Education. She moved to Raleigh, North Carolina in 1994 to accept a job with the Raleigh Police Department as a police officer. In 1995, she began the Masters of Science program at NCSU. Upon completion of her degree Jill hopes to further her learning through continued education and life experiences.

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# CHAPTER 1

## INTRODUCTION

Teams, especially highly functioning teams, are an extremely valuable asset in today's society. With the increase in technology, businesses and other organizations have shifted from an individual to a team focus (Maxwell, 1997). Businesses have taken note of how highly effective teams can positively affect the company and help them stay competitive. Well functioning and successful teams promote organizational stability and commitment, higher self-esteem, financial advancement, and a decrease in sick leave (McEvoy, 1997). Since so many positive outcomes are associated with the use of highly functioning teams; businesses continue to search for ways to improve through training and development.

A variety of training and development techniques have been used to enhance work teams. Experiential team building activities such as challenge course activities; rock climbing, rafting, and rescue simulations have been utilized by organizations worldwide to help teams become more productive (Miles, & Priest, 1999). In order for team building exercises to be successful, they need to be designed and framed to closely parallel what actually takes place in the workplace. Facilitation of the experience is used at the organizer's discretion during the team building activity to help participants link the actual activity with their real life situation. Positive improvements have been documented when experiential team building exercises have been linked through facilitation to parallel the workplace (McEvoy, 1997; Glaser, 1994).

In addition to businesses, athletic teams are beginning to show an interest in experiential team building activities in order to enhance their team's performance as a

cohesive unit (Smith, & Smoll, 1996). The intuitive assumption amongst coaches is that cohesive teams are likely to be more successful than non-cohesive teams (Smith, & Smoll, 1996). Team building exercises such as ropes courses and other challenge activities have positively influenced team cohesion (Carr, 1999; Ebbeck, & Gibbons, 1998). Coaches, much like chief executive officers, understand the importance of a team being one cohesive unit.

Cohesion was defined by Carron (1982) as “the dynamic process which is reflected in the tendency for a group to stick together in pursuit of its goals and objectives” (p. 124). Therefore, group performance depends in part on dedication to group goals. The construct of cohesion enables individuals to sacrifice personal desires and conform to the team’s needs (Smith, 1996). One could theorize that if cohesion can be enhanced, then team performance may increase, since higher levels of cohesion are linked to higher levels of performance (Williams, & Widmeyer, 1991; Granito, & Rainey, 1988; Gasperec, 1984). Since increased cohesion has been empirically linked to better performance, many researchers are beginning to investigate ways to increase cohesion.

A number of studies have suggested that team building exercises increase cohesion (Smith, 1996; Carron, & Spink, 1993; Spink, & Carron, 1992). For example, Carron and Spink (1993) investigated the effect of team building on cohesion in a university aerobics class and found that the experimental group was more cohesive and reported significantly higher individual satisfaction when compared to a control group. In a similar study, Spink and Carron (1992) compared thirteen fitness classes and found that the experimental group was more cohesive, had significantly fewer dropouts and late arrivals than the control group. Smith (1996) investigated the effect of team building

with ninth grade female basketball teams. While findings were statistically insignificant, the anecdotal reports from the coaches were positive and supported the continuation of team building.

Empirical research surrounding ways to enhance team cohesion for athletic teams is currently limited but is becoming more desired in our win at all costs society. Researcher's are starting to look at ways to enhance a team's cohesion in an effort to win more games. Therefore, the intent of this preliminary study is to explore the value of a one-time team building exercise and its effect on cohesion for a National Collegiate Athletic Association (NCAA) Division I women's basketball team.

### **PURPOSE OF THE STUDY**

The primary purpose of this exploratory study was to determine whether team cohesion could be enhanced in a NCAA Division I women's basketball team through participation in a one-time team building exercise. The exercise was designed to (1) encourage the team to communicate effectively, (2) rely upon teammates, and (3) increase social interaction outside normal boundaries. A secondary purpose of this study was to explore the challenges in conducting research with a NCAA Division I team.

### **RESEARCH QUESTIONS**

1. Does a one time team building exercise increase team cohesion?
2. What are the challenges in conducting research with a NCAA Division I women's basketball team?

## **LIMITATIONS**

This study was limited by the following factors:

1. A small sample size.
2. A non-random sample.
3. Due to NCAA restrictions, the researcher had a limited time frame to work with the team.
4. The Group Environment Questionnaire (GEQ) test instrument had to be administered at the team's convenience. And therefore, was not administered to the team as a whole, but administered to smaller groups after they had finished practice due to NCAA practice constraints during pre-season.
5. A large portion of the team were incoming freshmen that had no prior or a very limited relationship with the team.

## **DELIMITATIONS**

1. Participants of this study were female athletes (n=14) on a NCAA Division I basketball team during the 1999-2000 basketball season.
2. The instrument used in measuring team cohesion was the Group Environment Questionnaire developed by Carron, Widmeyer, and Brawley (1985).
3. The research design utilized was a one group pretest-posttest design.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This section will present a brief history of team building. Team building has been utilized by business and other organizations, as well as with athletic teams because of the positive affects it has demonstrated in both quantitative and qualitative research. The success for many team building exercises depends upon the particular exercise used and the parallels that can be drawn between the exercise and the participants daily work routine.

### **TEAM BUILDING AND BUSINESS**

Organizations understand that team building is a formidable task (Ellis, 1999). “In recent years, team building has become one of the most popular and widely used interventions for improving management relations and organizational effectiveness in business and industry” (Yukelson, 1997, p. 73). Traditional organizations with individual orientations that do not utilize the power of a team approach can no longer be competitive in the intricate and dynamic world of business (Ibbetson, & Newell, 1996). The development of today’s world requires businesses to tap more divergent knowledge, brainpower, and skills from its employees (Wolfe, & Box, 1988). Today’s organizations have to meet the challenges thrust upon them by fast paced technological advances (Ibbetson, & Newell, 1996). In order to adapt to rapid technological advancements and be more competitive in today’s society organizations are turning towards a team approach.

High functioning teams have become an important part of today’s business world and can serve organizations in a number of ways. One important function is technical

knowledge. Teams usually consist of members with different areas of expertise, so a broad range of knowledge is utilized. This allows each team member to contribute to the end product with their personal expertise. Involving employees with change is another important concept behind using teams. Getting employees involved with change usually makes them more supportive of the implementation (Salas, Rozell, Mullen, & Driskell, 1999). Team building serves to keep all team members motivated, makes them feel important, helps members acquire new skills and perceptions (Salas, Rozell, Mullen, & Driskell, 1999) and gives employees a sense of community (Gintonio, 1999). If employees are motivated and involved, they perform better for the organization or team.

Team building in a business environment has been shown to have many positive effects. A three year study by Glaser (1994) on teamwork and communication found that participating members reported a change in several areas. They reported an increase in their ability to raise issues and manage conflict, give mutual praise, support, and cooperation. The Glaser (1994) study also showed a clarification of roles and responsibilities, along with long term commitment to teamwork and innovations. A study of 232 organizations, across 16 countries, by Development Dimensions International, a team building development company, found that organizations working in teams showed higher improvements in performance than organizations not utilizing teams (Bernthal, 1998).

Organizations have used a variety of mediums to enhance or develop teamwork. Outdoor centered training or outdoor management education (OME), using ropes and challenge courses, have experienced rapid growth in training and development programs (Black, 1993; Burnett, 1994; Wagner, Baldwin, & Rowland, 1991; McEvoy, 1997).

Human resource professionals have utilized ropes and challenge courses, and other experientially based adventure activities to develop communication, trust, leadership, problem solving skills, and the ability for a team to work effectively with one another (McEvoy, & Cragun, 1997). For example, McEvoy (1997) conducted a study to assess the outcomes of an OME program in one organization. Findings revealed that participants in the outdoor training program exhibited increased self-esteem, organizational commitment, and were more likely to implement learning than non-participants. McEvoy and Cragun (1997) found similar results in a study investigating the effects of a ropes course on participants and found increased self-esteem, organizational commitment, and a fifty percent decrease in sick leave per month. If outdoor training programs used as team-building exercises can produce these results for corporations then what can similar programs do for athletic teams?

Over the past two decades, organizations have realized that employee involvement and participation are crucial to their success (Glaser, 1994). Team building helps individuals learn to participate and to adapt to changing situations (Prager, 1999). This in many ways parallels athletic teams. Athletic teams rely upon athletes' participation and their ability to adapt and overcome adversity for success. Team building exercises using experiential activities can enhance personal awareness and provide opportunities for decision making under stress (Chesteen, Caldwell, & Prahazka, 1988). These activities can not only increase employee's productivity but also may enhance an athlete's performance. Therefore, both coaches and businesses alike, are beginning to utilize team building exercises as a way to enhance their team.

## **TEAM BUILDING IN SPORT**

In today's competitive society, coaches, like chief executive officers, rely heavily upon the success of their respective team to maintain prosperity and notoriety (McNerney, 1994). Coaches strive to understand why some of their athletes work harder than others and how to get all team members to work effectively together as one cohesive unit. Both corporations and teams are searching for the optimum level of collaboration and success. Team building for sports is being viewed as a medium for increasing team success. For this reason, it is easy to understand why sport researchers over the past several decades have focused on team cohesion in sports (Henderson, Bourgeois, LeUnes, & Meyers, 1998). Before exploring the effect of cohesion on an athletic team, one must first understand the construct of cohesion.

### **COHESION DEFINED**

Researchers have defined cohesion in a variety of ways. Festinger, Schacter, and Back (1950) defined cohesion as, "the total field of forces which act upon members to remain in the group" (p. 164). In an early study, Gross and Martin (1950) stated that cohesion was "the resistance of a group to disruptive forces" (Cota, A., Evans, C., Dion, K., Kilik, L., & Longman, R., 1995, p. 573). Goodman, Ravlin, and Schminke (1987) perceived cohesion as "the commitment of members to the group task" (p149). The common denominator between these definitions is that cohesion mainly addresses how a team handles outside pressures and still pursues its goals. For the purpose of this paper, Carron's (1982) definition of cohesion as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives" will be used.

## **MEASURING COHESION**

Cohesion is a complex construct and is affected by a variety of factors. These factors include personal, leadership, team, and environmental factors (Weinberg & Gould, 1995). Personal factors refer to the individual characteristics of each group member. The leadership factor addresses the quality of leadership, for example age and experience, and the influence that a leader exerts on the team whether by a coach, a team captain or player. Team factors and the desire for success can be categorized as group characteristics. Finally, environmental factors include family expectations, contractual obligations, or minimum playing time. Group size, and time spent together as a team also play an important role in team cohesion. Due to the varying factors that affect cohesion, it is easy to understand why it has been a difficult construct to measure.

Over the years a number of instruments have been developed to measure team cohesion. Martens, Landers, and Loy (1972) developed the Sport Cohesiveness Questionnaire (SCQ) to measure cohesion. The SCQ was the first questionnaire developed to specifically measure cohesion in teams (Brawley, Carron, & Widmeyer, 1988). The SCQ assesses team cohesion through a seven-item rating system. However, neither reliability nor validity measures were established for the SCQ (Wienberg and Gould, 1995). Several researchers have used the SCQ to measure team cohesion (Arnold, & Straub 1972; Ball, & Carron 1976; Landers, & Crum 1971; Landers, & Lueschen 1974; Martens, & Peterson 1971; Melnick, & Chemers 1974; Widmeyer, & Martens 1978). The findings from five of the seven studies cited found increased cohesion to be linked with increased performance. The SCQ has had a significant impact on cohesion research but as Gill (1977) noted, published evidence for its reliability and validity was

not available. Due to the lack of empirical support for this measure, researchers developed another instrument to measure cohesion.

Carron (1982) developed a conceptual model defining cohesion. This model provided two important distinctions: group integration and interpersonal attractions to the group. Group integration is defined as “closeness, similarity, and bonding as a whole” within the group (Carron, Widmeyer & Brawley, 1985, p. 248). “Individual attractions to group, on the other hand, is the category that represents the interaction of the motives working on the individual to remain in the group” (Carron, Widmeyer & Brawley, 1985, p. 248). Carron et al. identified four sub-scales within these two distinctions: group integration - social (GI-S), group integration - task (GI-T), individual attraction to group - social (ATG-S), and individual attraction to group - task (ATG-T). The development of social relationships within the group can be viewed as the social aspect, while the task aspect can be considered an individual orientation toward achieving group goals or objectives (Smith, 1996). This relationship is diagrammed in Figure 1.

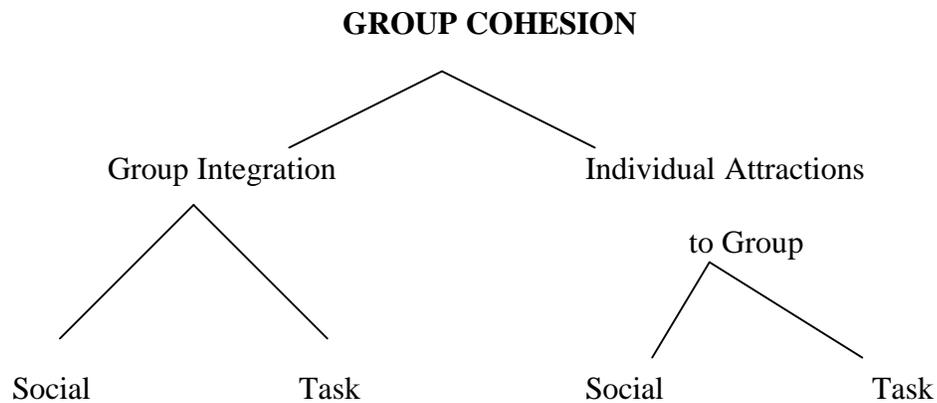


Figure 1 Conceptual Model of Cohesion  
(Carron, 1982)

The model presented in Figure 1 was used by Carron, Widmeyer, and Brawley (1985) to develop the Group Environment Questionnaire (GEQ)(See Appendix 1 for a copy of the GEQ). The GEQ is a conceptually driven, multidimensional instrument developed to measure cohesion (Carron, Brawley, & Widmeyer, 1988). It comprises 18 Likert scale questions that fall into four sub-scales (Carron, Widmeyer, & Brawley, 1985). The GEQ has shown to be both reliable and valid (Carron, Widmeyer, & Brawley, 1985). Today, the GEQ is widely used to measure cohesion in sport teams.

### **COHESION AND ITS EFFECT ON SPORT**

Studies investigating cohesion and its relationship to team sports have received greater attention in recent years (Henderson, Bourgeois, & LeUnes, 1998). Both coaches and players alike believe that team unity (cohesion) promotes positive interaction, which in turn improves team productivity (Henderson, Bourgeois, & LeUnes , 1998). “In sports, the assumption is widely held that cohesive teams - those characterized by dedication to common goals, effective coordination of individual and group effort, and interpersonal attraction among group members - are likely to be more successful” (Smith, & Smoll, 1997, p 115). Groups with higher cohesion have demonstrated superior performance, better communication, and more group stability (Carron, & Spink, 1993). Therefore, cohesion must contribute to group development and maintenance towards the group’s goals (Carron, Widmeyer, & Brawley, 1988).

Prapavessis and Carron (1998) examined the relationship between group cohesion and individual effort in sport teams. Findings suggested that an athlete’s perception of a team’s cohesion is directly related to the athlete’s individual output at practice. Cohesion was assessed using the GEQ and individual effort was measured through maximal

oxygen uptake. The results of this study suggested that team members who perceived higher cohesion had a higher work output during practice. In other words, the more cohesive the athlete felt towards the team, the harder the athlete worked at practice.

Granito and Rainey (1988) administered the GEQ to several groups of football players at the end of their season. It was theorized that starters would perceive higher cohesion than non-starters. Starters scored higher in “group integration - task” and “individual attraction group - task” than non-starters. Starters and non-starters scored similarly on “group integration - social” and “individual attraction to group - social”. The authors postulated that starters were the ones performing and consequently trying to achieve the goals, and became more task oriented. Therefore, in this study, the starters were more cohesive and focused than the non-starters.

Ebbeck and Gibbons (1998) investigated the effects of a team building program on self-conceptions of sixth and seventh grade physical education students. A treatment group was exposed to a team building program every second week for eight months while a control group remained with their regular activities. The team building program included challenges ranging from the entire group balancing on an automobile tire to running an obstacle course. The students in the treatment group had higher scores on self-worth, physical confidence, athletic appearance and social acceptance.

A number of positive individual and group consequences have been associated with cohesion (Carron, & Spink 1993). Increased communication, productivity, stability, satisfaction, and persistence are a few of the factors critical to the development and vitality of the group (Carron, Widmeyer, & Brawley, 1988). Group resistance to disruption and increased output at practice are also linked with increased cohesion

(Brawley, Carron, & Widmeyer, 1988; Prapavessis, & Carron, 1998). Since increased cohesion has been linked with numerous positive attributes, many teams, both athletic and business, have questioned what methods actually increase team cohesion.

### **TRANSFER OF LEARNING**

Participants sometimes fail to understand how an adventure or team building experience will transfer or carry-over into future endeavors (Gass, & Priest, 1993; Maxwell, 1997). The positive effects that a team building activity can produce for a client is one measure of a program's credibility (Gass, 1985). How can a simulated rescue exercise effect a basketball team when they occur in two completely different arenas? Training and development coordinators of large corporations have asked the same question about corporate adventure training and how it will effect their employees future work (Maxwell, 1997). Many of the skills that clients or players learn during the adventure training experience can be transferred to other activities.

Transfer is the effect that past learning has on future learning (Gass, 1985). Transfer means "integrating elements of one learning environment into another" (Gass, & Priest, 1993, p.18). The main idea of adventure programs or activities suggests that learning which occurs during the adventure experience will be used by the participant in the real world through transference (Gass, & Priest, 1993). The amount of learning that transfers from the experiential activity to the client's work, play, or home environment is the measure of programs success (Gass, 1985).

### **TYPES OF TRANSFER**

All transfer learning can be positive, negative or non-existent (Gass, & Priest, 1993). There are three theories that discuss how transfer from one learning environment

is linked to another (Gass, 1985, p. 18). These theories include specific transfer, non-specific transfer, and metaphoric transfer (Gass, 1985). Specific transfer refers to skills that are closely related to each other, but can be used for different activities (Gass, & Priest, 1993). For example, the forward stroke used to paddle a kayak is similar to the forward stroke used in a canoe. The activities are quite different but the skill is very similar. The second type of transfer, non-specific transfer, focuses on learning more generalized principles and applying them to different situations (Gass, & Priest, 1993). “In adventure programs, the principle of trust developed from belaying to protect against physical injury (in rock climbing) can translate to trusting one another for support in other types of risk taking” (e.g. sharing secrets, volunteering ideas, or lending money) (Gass, & Priest, 1993, p. 18). Metaphoric transfer is the third type of transfer. Gass and Priest (1993) describe a metaphor as “an idea, object, or description used in place of another different idea, object or description, to denote comparative likeness or similarity between the two” (p.19). Bacon (1983) uses the example of a ship plowing the sea as a metaphor. A ship does not plow but one can understand the metaphor. Metaphoric transfer is the most powerful type of transfer in an adventure exercise (Bacon, 1983).

There are three types of metaphoric transference: spontaneous, analogous and structured (Bacon, 1987). When learners discover important connections without a facilitator, the learning is considered spontaneous (Gass, & Priest, 1993). Analogous metaphoric transfer occurs when debriefing techniques are used to help the client understand the adventure exercises connection to daily living (Gass, & Priest, 1993). If the facilitator wants to conduct a structured metamorphic transference, a briefing takes place in advance of the adventure program or activity. This approach, called front

loading is used so the client can begin to make the connection before the debriefing discussion after the exercise (Gass, & Priest, 1993). For a strong metaphoric experience, the adventure program needs to be rich in isomorphs (Gass, & Priest, 1993).

“The key factor in determining whether experiences are metaphoric is the degree of isomorphism between the metaphoric situation and the real-life situation. Isomorphic means having the same structure” (Bacon, 1983, p. 4). In other words, the facilitator must plan the appropriate adventure activity for each group, so experiences can be easily transferred to the real world. It is extremely important that participants are able to make the connections between the isomorphs.

Bacon (1987) used the example of a high ropes course experience for adult alcoholics as a metaphoric transfer using isomorphs. The adult alcoholics were advised that on this day the instructors (facilitators) would be encouraging them not to complete the ropes course, to give up, as a reflection of how friends in real life might encourage them to drink. This was done to show that clients need to trust themselves and do what is right. This is an example of how real life might tempt them to quit and how they might handle these situations when they leave the facility (Gass, & Priest, 1993). The ropes course presented metaphorical situations to real life where fear and temptations became the isomorphs. The ropes course encourages clients to be successful, and to rely upon each other to reach that success.

### **SUMMARY**

The ultimate goal of any team is to successfully achieve their goals. Corporations and athletic teams alike are striving to reach higher levels of cohesion along with increased member satisfaction in order to help attain goals. Sports teams with higher

cohesion have demonstrated superior performance (Carron and Spink, 1993). In sports, both coaches and players alike believe that team cohesion promotes positive interaction and improves team performance (Henderson, Bourgeois, & LeUnes, 1998). Team building using experiential activities as a medium for learning has assisted business and sports teams in having these successes (McEvoy, 1997; Glaser 1994). Team building techniques have shown positive results in both quantitative and qualitative reports (Carron, & Spink, 1993; Chesteen, Caldwell, & Prahazka, 1988; Glaser, 1994; McEvoy, & Cragun, 1997; Prager, 1999; Smith, 1996; Spink, & Carron, 1993).

Planning the correct activity and facilitation of the experience are the most important aspects in linking the activity to future success (Gass & Priest, 1993). It is important that the team building exercises be linked to real-life situations through isomorphs, so the participant can understand the connection (Bacon, 1983). In the future, it will be recognized that the most successful businesses and teams are utilizing team building, because to belong to a highly cohesive group is to reach a high level of personal and professional satisfaction. Perhaps Carron, Brawley, and Widemeyer, (1999) described it best:

Anyone who has been in a highly cohesive group - a family, a close friendship, a work unit, a military unit, a fraternity, or a sport team - knows that a cohesive group is special. As a member, you have confidence that is more personal in your own work as well as in the collective output of the group. In a cohesive group, there's also a high degree of satisfaction, you feel less tension; you're more productive personally; there's a feeling of performance and stability because you

and the other group members are less likely to leave; and, finally, the credit for any success and the blame for any failure is accepted equally (p94).

The goal of team building activities is to help teams reach this level of cohesion and satisfaction.

### **CHAPTER III**

#### **PROCEDURES**

The purpose of this preliminary study was to examine how a one-time team building exercise affects the cohesion of a National Collegiate Athletic Association (NCAA) Division I women's basketball team and the challenges associated with working with a NCAA Division I team. Topics discussed in this chapter will include the research design, subjects, the test instrument, collection of data, and the treatment of data.

#### **RESEARCH DESIGN**

A one group pretest posttest design was used to collect data for this exploratory study. Fourteen members of a women's NCAA Division I basketball team participated in a one time team building exercise that consisted of a search and rescue initiative. The Group Environment Questionnaire (GEQ) was administered one week before the team building exercise and one following the team building exercise.

#### **SUBJECTS**

The participants in this study consisted of fourteen players, all members of a NCAA Division I women's basketball team, eighteen to twenty two years of age. The team consisted of six freshman, three sophomores, three juniors, and one senior.

#### **THE TEST INSTRUMENT**

Team cohesion was measured using the Group Environment Questionnaire (GEQ) (Carron, Widmeyer, & Brawley, 1985) (Appendix 1). Permission to use this instrument was obtained by Dr. A. Carron. It contains 18 Likert scaled questions ranging from strongly disagree "1" to strongly agree "9". The GEQ is theoretically based on Carron's (1982) conceptual model of cohesion. This model divides cohesion into two categories:

group integration and interpersonal attractions to the group. These two categories are divided into four sub-scales: group integration-social (GI-S), group integration-task (GI-T), interpersonal attractions to the group-social (ATG-S), and interpersonal attractions to the group-task (ATG-T). These four sub-scales describe the individual member's feelings about their place within the team. Carron, Brawley, and Widmeyer (1985) define the four sub-scales in the following way:

Group Integration - Task (GI-T) Individual team member's feelings about the similarity, closeness, and bonding within the team as a whole around the group's task.

Group Integration - Social (GI-S) Individual team member's feelings about the similarity, closeness, and bonding within the team as a whole around the group as a social unit.

Interpersonal Attractions to the Group - Task (ATG-T) Individual team member's feelings about his or her personal involvement with the group task, productivity, and goals and objectives.

Interpersonal Attractions to the Group - Social (ATG-S) Individual team member's feelings about his or her personal acceptance, and social interaction with the group.

The GEQ demonstrated internal consistency, reliability and content validity in two different sport team samples during its initial development (Carron, Widmeyer, & Brawley, 1985). The four sub-scales produced a Cronbach's alpha of .74, .58, .78, and .61 respectively. Brawley, Carron and Widmeyer (1987) used three studies to further test

the GEQ's concurrent, predictive and constructive validity factors and the GEQ demonstrated "content, factorial, concurrent, predictive, and construct validity" (p. 275). Li and Hammer (1996) subsequently tested the validity of the GEQ with an intercollegiate sample using confirmatory factor analysis. The GEQ again established factor validity and reliability when measuring cohesion in an intercollegiate team sample.

Not all reviews of the GEQ have supported its validity and reliability. Westre and Weiss (1991) conducted a study using the GEQ and found only the task sub-scales to be reliable. Schutz, Eom, Smoll, and Smith (1994) tested the GEQ with confirmatory analysis with respect to gender, individual and team factors. The data from their sample of high school students (426 males, 314 females), did not support the structure of the GEQ. They suggested further examination, development, and refinement of the GEQ as an instrument to measure cohesion in sports teams. Although some researchers (Schutz et al., 1994; Westre, & Weiss, 1991) have concerns about the validity and reliability of the GEQ, most researchers support the use of the GEQ as an instrument to measure cohesion.

### **COLLECTION OF DATA**

The head coach of a NCAA Division I women's basketball team was contacted to solicit consent for team members to participate in this study. A meeting was planned during the team's preseason with the head coach, researcher, and facilitator to describe the benefits of team building and outline this study. During this meeting, the selected team building exercise, a rescue simulation, was explained to the head coach. After providing the coach with information about other studies concerning team cohesion, and

how the team building exercise might positively affect the teams cohesion, the coach consented for the team to participate in the study.

During the meeting to initiate the study, the head coach explained that there were strict time constraints placed on the team by the NCAA. Due to these constraints, the team was conducting several practices a day with only a few players attending each practice. No more than four players attended practice at one time, and four practices were conducted consecutively each afternoon. The coach further explained that if the researcher wanted to conduct a team building exercise with this team, the researcher would have to administer the questionnaire to the players after the conclusion of each practice session. This meant that in order for each team member to be included in the study, the questionnaire would have to be administered to four separate groups at four separate times on the same day. Given the circumstances, the researcher agreed to this constraint, and administered the pretest one week after the study was presented to the coach, during the teams preseason.

The researcher met with the each group of players at the conclusion of every practice session to discuss the team building exercise. The team building exercise was explained and the player's voluntary participation was solicited. Each player consented to participate in the team building exercise and signed an informed consent form (Appendix 2).

After consent was obtained from the players, the researcher distributed the GEQ and read the instructions provided with the instrument. Pencils were provided to the players so they could complete the questionnaire. Freshmen had to omit answering question number two, regarding the amount of playing time, since they did not know the

amount of playing time they would receive. After the players finished completing the GEQ, the questionnaire and pencil were returned to the researcher. Each player was instructed on the required equipment and clothing needed for the team building exercise along with when and where to meet. This procedure was followed for all four groups of players. A copy of the GEQ can be found in Appendix 1.

A one-time team building exercise was used as the intervention for this study. The team building exercise consisted of a rescue simulation that required the team to locate, perform the required first aid, and evacuate a volunteer patient. The exercise was designed to enhance communication skills, social interaction, and reliance upon teammates.

The rescue simulation took place in a wooded area of Umstead State Park, located 10 miles west of Raleigh, North Carolina. Permission to use an area within the for this exercise was obtained from the Park Superintendent a week prior to the actual exercise. A wooded area which contained a small creek, multiple downed trees, hills, and gullies was selected. Due to the varied class schedules of the athletes, the exercise began at approximately four o'clock in the afternoon during the first week of October, 1999. The late start, potential threat of rain, darkness, and time of the day were all concerns for the researcher and facilitator.

Prior to the arrival of the team, the facilitator met with and prepared the volunteer patient. The volunteer patient was a 6'1" male that weighed approximately two hundred and fifty pounds. Preparation included leading the patient to a location in the woods, approximately one-half mile from the starting point. After arriving at the location, the patient was placed between several fallen trees making access for the players difficult.

To make the rescue simulation more realistic, stage blood and morticians wax were used to create wounds to the patient's head and hand. Surveyor's tape was used to mark the trail to the patient to expedite the teams hiking time due to potential inclement weather and time constraints.

To initiate the team building exercise, team members met in an open field adjacent to the search area. Basic first aid techniques and the proper way to load, carry, and transfer the stokes litter were discussed. The team was given an opportunity to ask questions and practice transferring the stokes litter between players and over obstacles. Once all questions and concerns were addressed, the team was divided into three teams. Five players were randomly selected and placed on a first aid team and five on an equipment team. The four remaining athletes formed a support team and were prepared to assist with any task.

Once the orientation was completed, the team was given the go ahead to locate and retrieve the patient. The team was to hike approximately one half-mile into the woods to locate the patient. The path to the volunteer patient was not a designated trail so the terrain was covered with fallen trees, branches and other obstacles, making travel difficult. As mentioned before, the path to the volunteer patient was marked with surveyor's tape to expedite locating the victim. The first aid team was the first team into the woods. They were followed approximately five minutes later by the equipment team and then the support team.

The patient was located approximately twenty minutes after the search began. The first aid team began administering first aid while the equipment team began to ready the stokes litter. Members not directly involved in the first aid or preparation of the litter

were discussing ways to move the patient and identifying the best path to use in removing the patient from the woods. The researcher, facilitator, and one assistant coach did not communicate with but team during the actual exercise but rather monitored the team's interaction and activities.

After completing the necessary first aid, the patient was loaded and secured in the stokes litter. Team members then began the task of evacuating the patient from the area. It took the involvement of every team member to complete this task. Those that were not actively involved with carrying the litter were busy moving obstacles out of the path of the litter team. It took the team approximately forty minutes to retrieve the patient and complete the exercise.

Following the "rescue," the team was provided with snacks and drinks and adjourned to the clearing where the exercise began. The facilitator began a debriefing session to discuss the events that occurred during the exercise. The debriefing was used to assist in the transfer of learning from this exercise to the teams experiences on the basketball court. Topics such as how everyone's attitude and participation affected the exercise, along with how they communicated and relied on one another were discussed. The facilitator also addressed the different roles that the players assumed and how everyone contributed.

One week following the team building exercise, the researcher returned to the team practice and administered the posttest. At the completion of the players scheduled practice each member received the GEQ and pencil from the researcher. Each athlete completed and returned the GEQ to the researcher while still in the gymnasium. Since

the team was still practicing in small groups, the researcher completed this cycle for each group of players until all players had completed the questionnaire.

### **TREATMENT OF DATA**

Scores for each individual were obtained during the pretest and posttest. Scores were reversed for questions on the GEQ that were reversed scored. For example, question 5 states, "Some of my best friends are on this team.", if a player were to answer "9", they would be answering as "strongly agree". This question is negatively worded. A higher score on this question would indicate more cohesion. On these questions the scores were reversed. This was done so all the questions from the GEQ would fall on the same ratings scale. The scores were then separated in to the four subscales provided with the GEQ. Data analyses were performed using Microsoft Excel utilizing Microsoft Excel's StatPlus software. The mean and standard deviation were computed to compare the pretest and posttest scores of the four subscales of the GEQ. The X Chart test was calculated as a control chart. The X Chart displays the grand mean for each question, along with the upper and lower control limits for each question. The upper and lower control limits show the range of each answer.

### **SUMMARY**

A one group pretest-posttest research design was utilized to examine the data. The subjects in this preliminary study were a NCAA Division I women's basketball team (n=14) consisting of eight returning players and six incoming freshman. Players were asked to participate in a team building exercise that consisted of a rescue simulation conducted in a wooded area in a local State Park. The instrument used to measure team cohesion was the GEQ which divides cohesion in to four sub-scales: group integration -

task, group integration - social, interpersonal attractions to the group - task, and interpersonal attractions to the group - social. The GEQ was administered one week prior to and one week after participation in the rescue simulation. The four sub-scales of the GEQ were analyzed to measure changes in team cohesion.

## **CHAPTER 4**

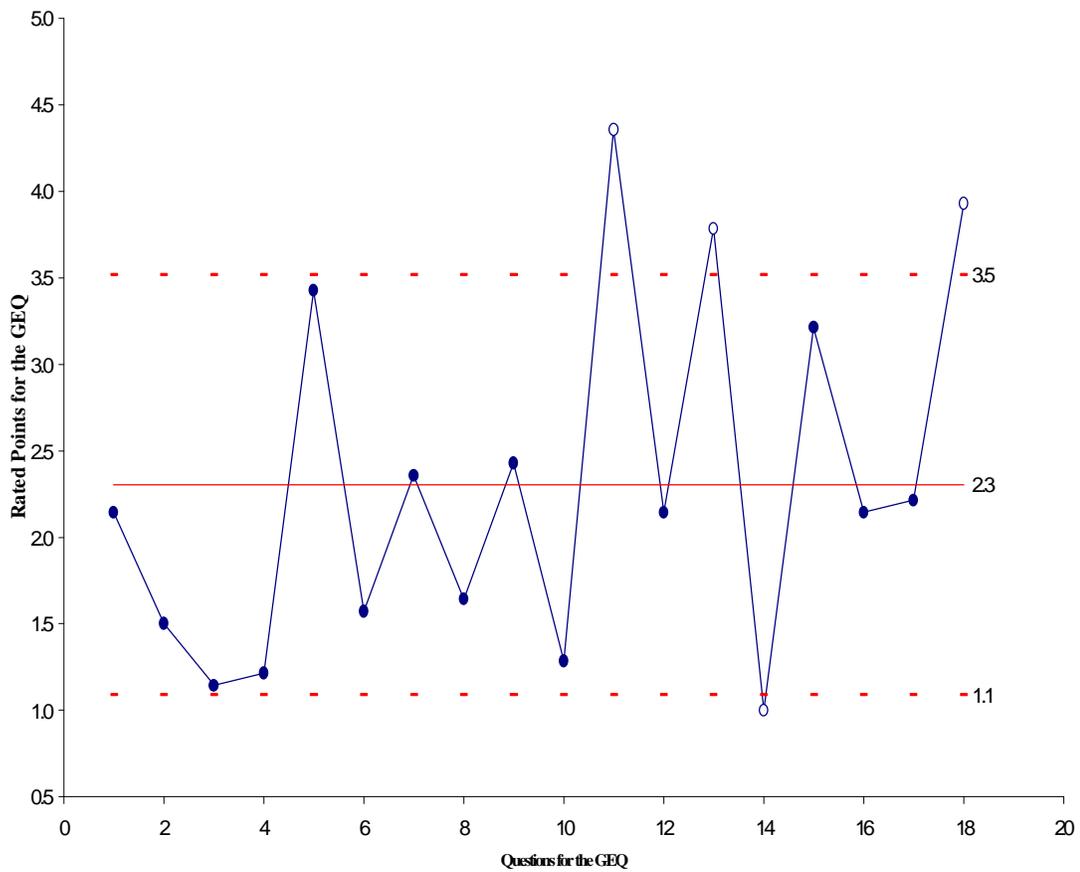
### **FINDINGS**

The purpose of this preliminary study was to measure the effects of a one-time team building exercise on team cohesion and to investigate the difficulties of working with a National Collegiate Athletic Association (NCAA) Division I women's basketball team. A one group pretest posttest design was employed to measure any changes in team cohesion. This chapter presents the statistical analysis of the data and relates the problems encountered while working with a NCAA Division I team.

### **STATISTICAL ANALYSIS**

The small non-random sample size ( $n=14$ ) restricted the statistical analysis that could be performed with the data. Each of the means for the four sub-scales of the GEQ were compared for pretest and posttest results (Figure 3). Simple mean comparisons between the pretest and posttest revealed no strong difference (Table 1). Although no strong difference was indicated between the pretest and posttest, the results on both tests indicated that the team was highly cohesive. The lower the score, the higher the team cohesion.

A X chart was generated using Microsoft Excel with StatPuls software. The X chart determines a grand mean and produces a center line. The upper and lower control limits or range for each question are calculated using the average scores for each question and then plots these on the chart. Data points falling outside the normal range indicate a problem with the question indicated. The GEQ does not provide any standards to be used as normal ranges.



**Figure 1**  
X Chart for Pretest Scores to the GEQ

The grand mean for the GEQ pretest was 2.3 (Figure 1) with an upper range of 3.5 and a lower range of 1.1. Numbers found outside of this range include questions 11, 13, 14 and 18 (Figure 1). The player's posttest ratings of cohesion are shown in Figure 2. The grand mean score of the posttest is 2.26 with an upper range of 3.6 and a lower range of .9. None of the scores on the posttest fell outside of the normal range. This indicates less variance in the posttest than in the pretest. Lower scores indicate a high level of cohesion whereas higher scores indicate less cohesion. Overall the team exhibited a high level of cohesion.

The mean and standard deviation were also calculated for each sub-scale of the retest and posttest (Table 1). The standard deviation for the four pretest posttest sub-

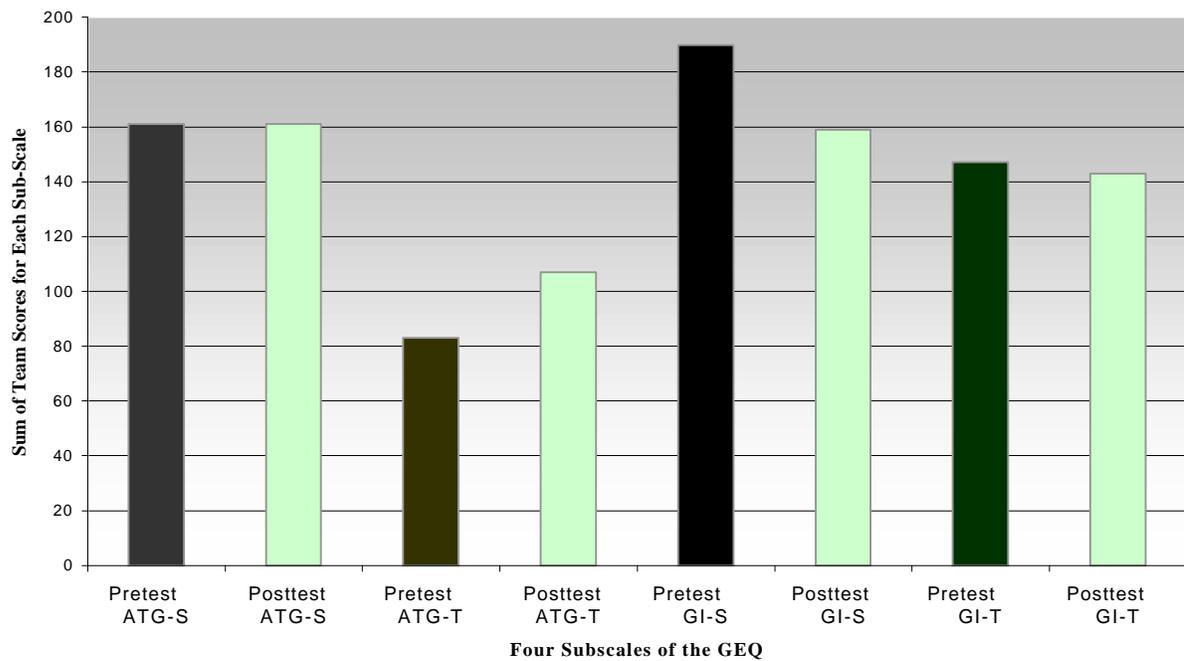
scales, for the pretest and posttest were below 2.5. The lower the scores, on this ratings scale, the a higher level of cohesion.

Table 1

Mean and Standard Deviation of the Four Subscales of the Group Environment Questionnaire

	ATG-S		ATG-T		GI-S		GI-T	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Pre-test	2.3	2.37	1.48	1.46	3.39	2.12	2.1	1.63
Post-test	2.3	2.22	1.91	2.11	2.84	1.81	2.04	1.64

The total scores of the four subscales were also calculated for the pretest and posttest (Figure 3). No change was recorded between the pretest and posttest scores of attraction to group - social (ATG-S). Cohesion was scored more positively in the pretest attraction to group - task (ATG-T) versus the posttest. A slight increase in cohesion was found from the pretest to the posttest in the group integration - social (GI-S) and group integration - task (GI-T). The changes in cohesion were so slight that no inference can be drawn.



**Figure 3**  
**Comparison of Pretest - Posttest Scores for the Four Subscales of the Group Environment Questionnaire (GEQ)**

Some results maybe explained by inspecting at a few of the player’s answers on the pretest versus the posttest. Comparing the scores of players 1, 3, 5 and 10, a large range in their answers can be noted between the pretest and posttest (Appendix 4, 5, 6, & 7). For example, player 1 scored question number 1 as a “6” on the pretest and a “1” on the posttest (Appendix 4). A high amount of variance in questions 6, 13, and 17 was also indicated. Player 3 displays a large amount of variance in questions 3, 4, 5, 7 and 18 (Appendix 5). While player 5 answered questions 4, 5, and 11, very differently in the pretest and posttest (Appendix 6). Finally, player 10 provided different answers in questions 9, 11, and 18 (Appendix 7). It is thought that with the difference in the answers from the pretest to the posttest, this affected the outcome of the data.

A number of difficulties working with a Division I team were also identified. These will be discussed in detail the next chapter.

## SUMMARY

Microsoft Excel with StatPlus was used to analyze the data. The X chart was used to show the range of each question along with the grand mean. The mean and standard deviation were calculated for the four sub-scales of the GEQ. The total scores for each sub-scale were also calculated for the pretest and posttest (Figure 3). In comparing the total scores for each subscale of the pretest and posttest, no strong change in team cohesion was noted. According to the mean, standard deviation, and GEQ scores the team was highly cohesive before this preliminary study began.

## **CHAPTER 5**

### **CONCLUSIONS & RECOMMENDATIONS**

The purpose of this preliminary study was to explore the effects of a one-time team building exercise on team cohesion and to consider the difficulties of working with a National Collegiate Athletic Association (NCAA) Division I women's basketball team. To achieve these goals fourteen athletes participated in a one-time team building exercise. Each participant was asked to complete the Group Environment Questionnaire (GEQ) in a pretest posttest design. This chapter summarizes the conclusions drawn from the study and makes recommendations for future research.

### **CONCLUSION**

A women's basketball team (n=14) participated in a one-time team building exercise consisting of a rescue simulation to explore its effect on team cohesion. Players were eighteen to twenty two years of age and included six freshmen, four sophomores, three juniors, and one senior. Participants were asked to complete the Group Environment Questionnaire (GEQ) approximately one week prior to and one week after the team building exercise. The GEQ is an instrument designed to measure team cohesion (Carron, A. V., Widmeyer, W. N., & Brawley, L. R., 1985). A one group pretest-posttest design was used to collect data. The data from the pretest and posttest were reviewed for changes in team cohesion.

Findings in this preliminary study indicated no change in team cohesion scores after the one-time team building exercise. The four sub-scales of the GEQ: individual attraction to group - task (ATG-T), individual attraction to group - social (ATG-S), group

integration - task (GI-T) and group integration - social (GI-S), were compared. No reportable changes were found between the pretest and the posttest.

A number of issues were identified that affected this study: 1) using a small (n=14) and nonrandom sample size with no control group, 2) time constraints and restrictions imposed by the NCAA and coach, 3) some issues of working with an intact team and 4) issues that arose with the GEQ.

Locating a control group was difficult for many reasons. Intercollegiate teams have a considerable amount of turnover. Every year new players join and older players graduate. Teams also have a varying number of players that are freshmen, sophomores, juniors and seniors. As stated previously, most coach's have a different style for enhancing team cohesion and play. Finding suitable teams and opportunities to work with these teams also presents problems. Since both experimental and control groups need to be similar, finding a suitable control group was extremely difficult for this preliminary study.

Conducting research with a NCAA Division I team can be a challenging task given the restrictions placed on Division I teams by the NCAA. Coaches are reluctant to dedicate valuable practice time for a team building exercises and subsequent research. Since the NCAA limits the length of the preseason and practice time, it can be difficult to get coaches to agree to participate in research. Coaches are compelled to utilize the time for allotted practice, for conditioning athletes, working on plays, and developing skills. This further limits the time to initiate and conduct an experiment. Conducting experiential team building activities may also cause coaches to become concerned about potential injuries to their players. If a coach does consent, as in this case, the researcher

has a limited window of opportunity to conduct the research. Findings from this study suggest that researchers be efficient with the limited time allotted to them.

This particular team building exercise was a difficult task to complete because of the time variable and the weather. The researcher had four hours one afternoon to work with the team. The team building exercise did not start until late in the afternoon because of the athlete's class schedule. The threat of inclement weather further restrained the team building exercise. If the team building exercise could not have been completed on the day designated from the coach, the researcher would not have been able to conduct the experiment.

Conducting research with an intercollegiate basketball team also means working with an intact group. This team consisted of eight returning players and six incoming freshmen. The six freshmen had limited exposure to team activities, including a modified practice schedule since their arrival on campus, suggesting that players had already developed a relatively high level of cohesion. This could explain the similar results from the pretest scores to the posttest scores on the GEQ. It is also possible that a one-time team building exercise has no effect on team cohesion.

It could be argued that more than one team building exercise is needed over a period of time in order to see measurable results. Research supports the idea that the more frequent the team building exercises the greater the effect on the participants (Carron, Widmeyer, & Brawley, 1988; Smith, 1996). A team exhibiting a lower level of cohesion might reflect a more measurable result, compared to a team with a high level of cohesion. A team experiencing internal problems, such as communication or leadership

issues might also benefit from a team building exercises. More research will be needed to resolve these questions.

The use of the GEQ as the test instrument and the testing procedure may also help explain the results. Some questions in the questionnaire are worded positively while others are negatively worded. During the administration of the first questionnaire, the athletes appeared attentive to the questionnaire, reading each question carefully. However, during the posttest, the athletes appeared to rush through the questionnaire. This could explain why some subjects answered questions as “strongly agree” on the first questionnaire and answered the same question two weeks later as “strongly disagree”. Familiarity with the test due to the proximity of the pretest and posttest might have influenced their responses.

Although the GEQ has been used on numerous occasions (Brawley, Carron, & Widmeyer, 1988; Carron, Widmeyer, & Brawley, 1988; Carron, Brawley, & Widmeyer, 1990; Spink, & Carron, 1992; Smith, 1997; Smith, & Smoll, 1997), the development of a new instrument might be needed for this type of research. One particular problem that surfaced during the administration of the GEQ involved the instrument itself. The GEQ is written for an intact group. As stated before, the team used in this study included six incoming freshmen. These players could not answer one question in the questionnaire involving playing time. Difficulties were also noticed in questions involving the social activities of the team. A few players omitted answering some of these questions.

The method by which the test was administered may have also contributed to the results. The test could not be given to the entire team at one time or in a controlled classroom setting. Ideally, the GEQ should have been administered to the entire team at

a given place and time. Instead, the pretest and posttest were administered on a gymnasium floor. Practice constraints imposed by the NCAA had the team divided in to four small groups for practicing purposes. When each small group completed practice the researcher administered the GEQ. This was done for the pretest and posttest.

Another problem that affected the collection of data was the proximity in time that the pretest and posttest were administered. The posttest questionnaire was administered approximately three weeks following the pretest, which was one week after the team building exercise. The administration of the posttest did not directly follow the team building exercise because a “post activity euphoria” is generally experienced after these types of activities. Testing took place in the preseason. The timing of the posttest was chosen in order to rule out other variables which may have influence on the teams cohesion. It was thought that if the test was administered one week after the exercise the effects of “post course euphoria” and other team building influences the coaches might impose would also be limited. Through familiarity of the test, subjects were believed to “skim” through the questions and possibly answered them inaccurately causing a variance in some answers. An indication of this is when a player answered one question on the pretest as a “1” or “strongly agree” and then answered the same question during the posttest as “9” or “strongly disagree”. The researcher believes if the pretest and posttest were further separated by time this might not have happened.

Several issues of internal validity arose during this research, as cited above. Collecting data for this research took approximately one month. During this time, the team continued to practice, attend social functions, and go to class. This made maturation an issue for the researcher to consider. Many events that might have affected

the player's view of team cohesion may have occurred between the pretest and posttest that were outside the control of the researcher. The testing process, as discussed previously, and the familiarity the subjects had with the test were also internal validity concerns. Finally, the GEQ, while the best instrument available, had shortcomings where this research was concerned because of the make-up of the group being researched.

One attribute the team demonstrated during the team building exercise that carried over from their basketball playing was how they called for a person to relieve them while carrying the stokes litter. When a player was tired of carrying the stokes litter they raised their free hand to call for a substitution. This was done during the team building exercise the same way that it was done during a basketball practice or game. This would seem to indicate that they had the ability to transfer what they had learned as a basketball team to what they were doing as a team elsewhere. This observation led the researcher to believe that skills they learned during the team building exercise could be transferred back to the basketball court or elsewhere.

### **RECOMMENDATIONS**

Team building and its effect on team cohesion in an athletic setting is a new area for research. Athletic teams use various types of team building exercises in an attempt to enhance their team performance. The problem is that there are no established measures to show how effective team building exercises are in effecting team cohesion.

There are several challenges a researcher faces when approaching a coach, particularly if it is a Division I NCAA team, in order to conduct team building research. One challenge is gaining access to the team. Division I teams and coaches are not the easiest people to access. One important step to can gain access to a team is by initiating a

meeting with the head coach. Once access has been gained, the coach's concerns must be addressed. The coach in this case was most concerned with the potential for injury during the exercise. Another challenge was the NCAA. The NCAA places limits on the amount of time the team can practice together during the preseason. Before the coach agreed with the researcher's proposal, the coach needed to clear the time and activity with the NCAA compliance person. These are a few considerations that must be addressed if further research is to be conducted with NCAA Division I teams.

Due to the time constraints placed on NCAA Division I teams researchers should consider the possibility of using more traditional team building exercises, possibly those that could be introduced in a gymnasium . However, this researcher strongly believes that removing the subjects from their comfort zone (gymnasium) and into a natural setting provided a better learning environment. Another possibility is to use a novel team building exercise and follow up with traditional, less time consuming team building exercises. All options should be presented and discussed with the coach.

This study did not provide evidence that a one-time team building exercise could positively effect team cohesion, qualitative research complimented by quantitative data might be a better option in conducting this type of social research. Qualitative research would be more difficult and time consuming but could provide more data. If non-obtrusive observations of the team could be made on a continual basis that recorded characteristics such as leadership and communication, more data could be gathered and inferred about a team building exercise.

Using qualitative measures might assist researchers in assessing team building activities effects on team cohesion. Non-obtrusive measures such as recording

observations, conducting interviews or other qualitative techniques might further explain what if any effects a team building exercise has on team cohesion. Developing a qualitative instrument to measure team building characteristics would be helpful in furthering this type of research. Qualitative research would require considerable time and preparation before the team building intervention was administered. Using qualitative measures along with a quantitative measure such as the GEQ might explain the effects of team building on team cohesion better than one measure alone.

This preliminary study provides researchers with some interesting concepts to consider for future research. What team building exercises are the most effective for enhancing cohesion? Is there a ceiling on how much team building exercises can influence cohesion? How can team building exercises and their effect on team cohesion be measured more completely?

While this study showed no strong evidence in influencing team cohesion, it did provide team building researchers with some new venues to explore. Coaches for years, at all levels, have intuitively believed that teams with higher cohesion play better (Smith & Smoll, 1997). A number of top ranked teams, including the men's basketball team at Duke University participate in a variety of team building exercises ("Krzyszewski," 2000). Studies have supported the idea that team building exercises increase cohesion in sport teams (Smith, 1996; Carron & Spink, 1993; Spink & Carron, 1993). Groups with higher cohesion have demonstrated superior performance, better communication, more group stability (Carron & Spink, 1993) and tend to work harder in practice (Prapavessis & Carron, 1998). Time constraints play a significant role in the amount of effort that can be spent utilizing team building exercises to increase team cohesion. For this reason, it is

important for coaches and other professionals to understand the potential of team building exercises and the effect these activities have. Further research is needed to determine what team building exercises might be able to achieve this goal and if the GEQ is the proper instrument to measure these activities.

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# **THE GROUP ENVIRONMENT QUESTIONNAIRE**

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## Introduction

The purpose of The Group Environment Questionnaire (GEQ) is to assess the cohesiveness of the group as reflected through the perceptions of individual members. There are two versions, a sport team version and an exercise class version. The GEQ is composed of 18 items in four scales:

- a) 4 items in Individual Attractions to the Group-Task
- b) 5 items in Individual Attractions to the Group-Social
- c) 5 items in Group Integration-Task
- d) 4 items in Group Integration-Social

The definition of each scale is presented as follows:

Group Integration-Task (GI-T) Individual team member's feelings about the similarity, closeness, and bonding within the team as a whole around the group's task.

Group Integration-Social (GI-S) Individual team member's feelings about the similarity, closeness, and bonding within the team as a whole around the group as a social unit.

Interpersonal Attractions to the Group-Task (ATG-T) Individual team member's feelings about his or her personal involvement with the group task, productivity, and goals and objectives.

Interpersonal Attractions to the Group-social (ATG-S) Individual team member's feelings about his or her personal acceptance, and social interaction with the group.

## Scoring Key

Members are required to respond to the 18 statements about their team on a 9 point scale which is anchored at the two extremes by “*strongly agree*” and “*strongly disagree*”. The score on each specific scale is computed by summing the scores from the pertinent items.

It should be noted that some of the items on the GEQ are negatively worded. As a consequence, the items must be reversed scored-- stronger disagreement represents greater perceptions of cohesion. Also, of the items on the GEQ are positively worded. As a consequence, the items are scored according to the response on the scale itself—stronger agreement represents greater perceptions of cohesion.

For **Individual Attractions to the Group-Task**, items 2, 4, 6, and 8 are scored from *strongly disagree* = 9 to *strongly agree* = 1.

For **Individual Attractions to the Group-Social**, items 5 and 9 are scored from *strongly disagree* = 1 to *strongly agree* = 9. Items 1, 3, and 7 are scored from *strongly disagree* = 9 to *strongly agree* = 1.

For **Group Integration-Task**, items 10, 12, and 16 are scored from *strongly disagree* = 1 to *strongly agree* = 9. Items 14 and 18 are scored from *strongly disagree* = 9 to *strongly agree* = 1.

For **Group Integration-Social**, item 15 is scored from *strongly disagree* = 1 to *strongly agree* = 9. Items 11, 13 and 17 are scored from *strongly disagree* = 9 to *strongly agree* = 1.

## References

Discussions on the development of the GEQ and/or its psychometric properties are available in the following articles.

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## Sport Group Version

### Instructions to Respondents (front cover)

This questionnaire is designed to assess your perceptions of your athletic team. There are no right or wrong answers so please give your immediate reaction. Some of the questions may seem repetitive but please answer ALL questions. Your candid responses are very important to us. Your responses will be kept in strict confidence. Neither your coach nor anyone other than the researcher will see your responses.

[The instructions and information relating to informed consent and question pertaining to any relevant demographic data such as age, gender, and so on also may be included on the front cover page]

The following questions are designed to assess your feelings about **YOUR PERSONAL INVOLVEMENT** with this team. Please **CIRCLE** a number from 1 to 9 to indicate your level of agreement with each of the statements.

1. I do not enjoy being a part of the social activities of this team.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

2. I am not happy with the amount of playing time I get.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

3. I am not going to miss the members of this team when the season ends.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

4. I am unhappy with my team's level of desire to win.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

5. Some of my best friends are on this team.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

6. This team does not give me enough opportunities to improve my personal performance.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

7. I enjoy other parties more than team parties.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

8. I do not like the style of play on this team.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

9. For me, this team is one of the most important social groups to which I belong.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

The following questions are designed to assess your perceptions of **YOUR TEAM AS A WHOLE**. Please **CIRCLE** a number from 1 to 9 that best indicates your level of agreement with each of the statements.

10. Our team is united in trying to reach its goals for performance.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

11. Members of our team would rather go out on their own than get together as a team.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

12. We all take responsibility for any loss or poor performance by our team.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

13. Our team members rarely party together.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

14. Our team members have conflicting aspirations for the team's performance.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

15. Our team would like to spend time together in the off season.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

16. If members of our team have problems in practice, everyone wants to help them so we can get back together again.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

17. Members of our team do not stick together outside of practices and games.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

18. Members of our team do not communicate freely about each athlete's responsibilities during competition or practice.

1	2	3	4	5	6	7	8	9
<b>Strongly Disagree</b>								<b>Strongly Agree</b>

**North Carolina State University  
INFORMED CONSENT FORM**

**A Team Building Intervention with an Intercollegiate Women's Basketball Team and  
How it Effects Group Cohesion**

Dr. Aram Attarian,  
Parks, Recreation and Tourism

You are invited to participate in a research study. The purpose of this study is to measure the effects of a team building exercise on group cohesion.

**INFORMATION**

You will be asked to participate in a team building exercise and to complete a survey. The team building exercise will take approximately 4 hours (on one day). It will take place at Umstead State Park. It will require some back woods hiking and physical work. Safety measures will be taken during the exercise. The survey will be administered twice during the season and once at the completion of the study. It takes approximately 15 minutes to complete the survey.

**RISKS**

The team building exercise does have some obvious risks since it will take place in an outdoor setting. Some of the risks which may be present or occur include, but are not limited to:

- The hazards of traveling by foot in rugged terrain, including the potential of falling;
- Hiking, walking, or running in rugged terrain, including slippery rocks and vegetation;
- Injuries inflicted by animals, insects, reptiles, or plants;
- The forces of nature including lightning, weather changes, hypothermia, hyperthermia, sunburn, high winds, and others not named;
- The physical exertion associated with the outdoor activity;
- Traveling in a vehicle not driven by me.

All necessary precautions will be taken including bringing first aid materials with us and a cellular phone to contact authorities if we need additional assistance.

**CONFIDENTIALITY**

The information in the study records will be kept strictly confidential. Data will be stored securely and will be made available only to persons conducting the study. No references will be made in oral or written reports which could link you to the study. Informed Consent/Team Building

**COMPENSTATION**

For participating in this study you will receive no financial gains. Only the experience of participating in a adventure based team building exercise.

**EMERGENCY MEDICAL TREATMENT**

If you are injured during this team building exercise the researcher's will not be financial responsible for your medical bills or treatment.

**CONTACT**

If you have questions at any time about the study or the procedures, you may contact the researcher, Jill Murphy, at 6428 Tinderbox Lane, Raleigh, N. C. 20603 or 779-3224. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the Chairperson of the NCSU Human Subjects Committee, Box 7906, NCSU Campus.

**PARTICIPATION**

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned or destroyed.

**CONSENT**

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Subject's signature \_\_\_\_\_ Date \_\_\_\_\_

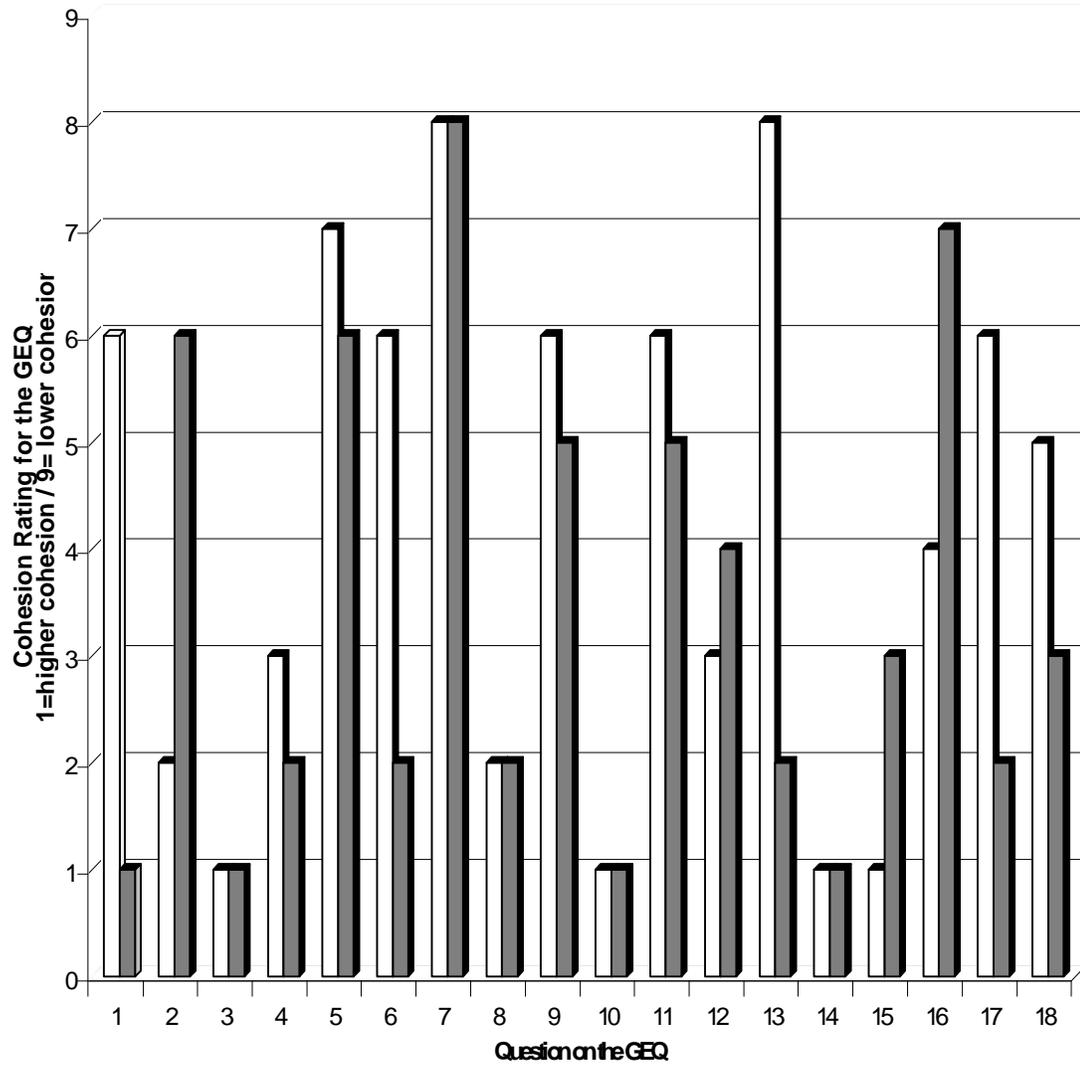
Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_

APPENDIX 3

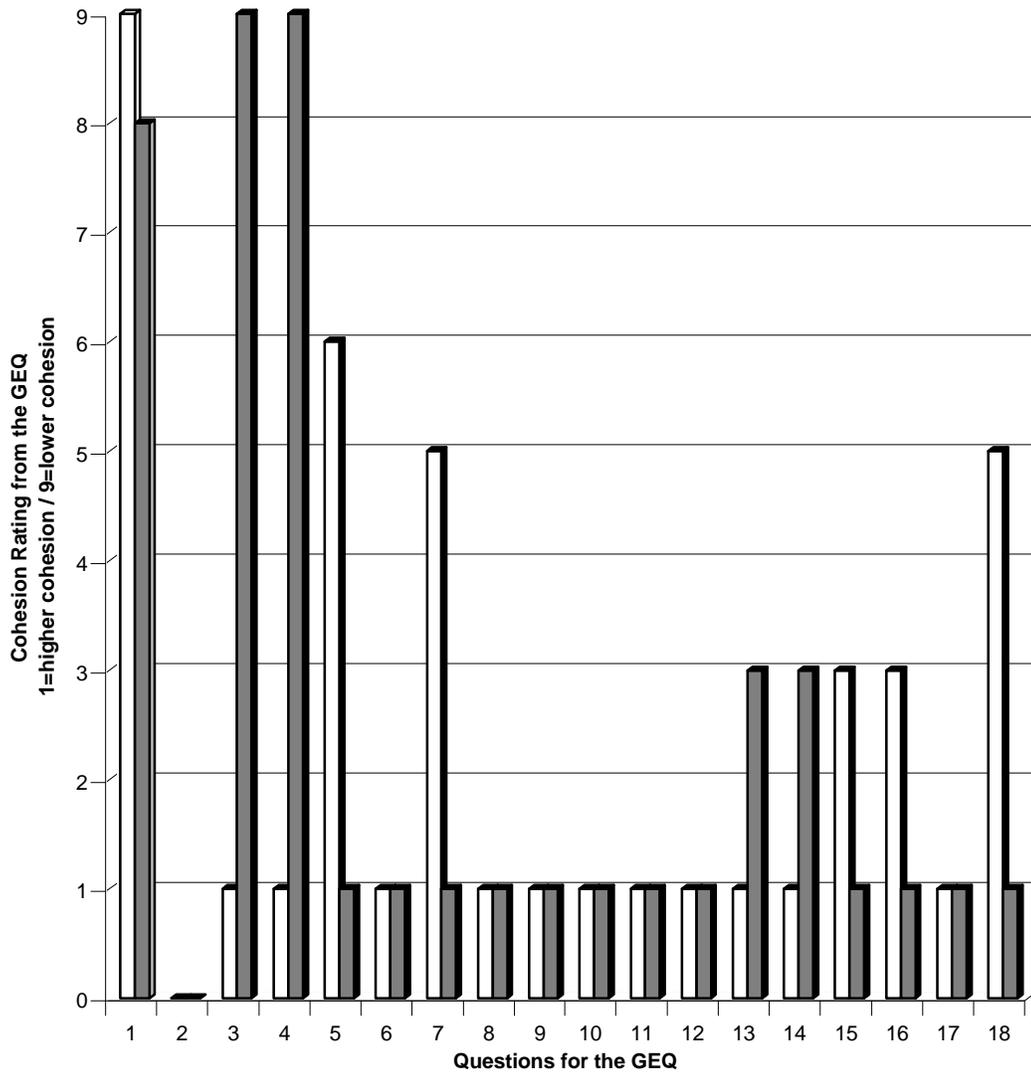
PLAYER'S RAW SCORES ON THE GROUP ENVIRONMENT QUESTIONNAIRE  
(a=Pretest / b=Posttest)

Player/Team	QUESTIONS																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1a	6	2	1	3	7	6	8	2	6	1	6	3	8	1	1	4	6	5
1b		6	1	2	6	2	8	2	5	1	5	4	2	1	3	7	2	3
2a	1	0	1	1	5	1	1	1	1	1	2	3	3	1	5	1	1	2
2b	1	0	1	1	4	1	5	1	3	1	6	1	3	1	3	1	1	1
3a	9	0	1	1	6	1	5	1	1	1	1	1	1	1	3	3	1	5
3b	8	0	9	9	1	1	1	1	1	1	1	1	3	3	1	1	1	1
4a	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4b	1	0	1	1	2	1	1	2	1	1	1	1	1	1	2	2	1	1
5a	1	1	1	1	1	2	1	5	4	1	7	4	7	1	5	3	2	5
5b	1	2	1	7	8	1	1	5	1	1	2	3	5	2	4	3	3	5
6a	2	0	3	1	7	1	0	1	1	2	6	1	3	0	4	2	2	8
6b	1	0	1	1	6	1	1	1	1	1	5	1	5	0	5	1	1	7
7a	1	0	1	1	5	1	1	1	1	1	3	1	3	1	3	1	1	2
7b	1	0	1	1	4	1	2	1	1	1	2	1	2	1	3	1	1	2
8a	1	6	1	1	3	2	2	3	1	1	6	3	7	1	6	1	7	7
8b	2	5	1	2	5	5	7	5	1	3	7	5	5	2	8	3	5	6
9a	3	1	1	1	1	1	7	3	3	1	7	4	3	1	3	5	3	5
9b	3	1	1	1	1	1	6	2	2	2	2	6	4	2	3	4	3	6
10a	1	0	1	1	6	1	1	1	9	1	5	3	5	2	4	3	2	5
10b	1	0	1	1	5	1	3	1	1	1	1	1	4	1	5	1	1	1
11a	1	7	1	2	1	1	3	1	1	1	7	1	5	1	2	2	2	2
11b	1	7	1	2	1	1	7	1	1	1	5	1	5	3	1	1	2	5
12a	1	1	1	1	1	1	2	1	1	1	2	1	2	1	2	2	1	2
12b	1	1	1	1	1	1	2	1	1	1	1	1	2	1	2	2	1	1
13a	1	3	1	1	1	1	1	1	1	4	3	3	2	2	2	1	1	2
13b	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	3	1	2
14a	1	0	1	1	3	2	0	1	3	1	5	1	3	0	4	1	1	4
14b	1	0	2	2	2	8	1	1	1	1	3	2	5	2	4	1	2	3

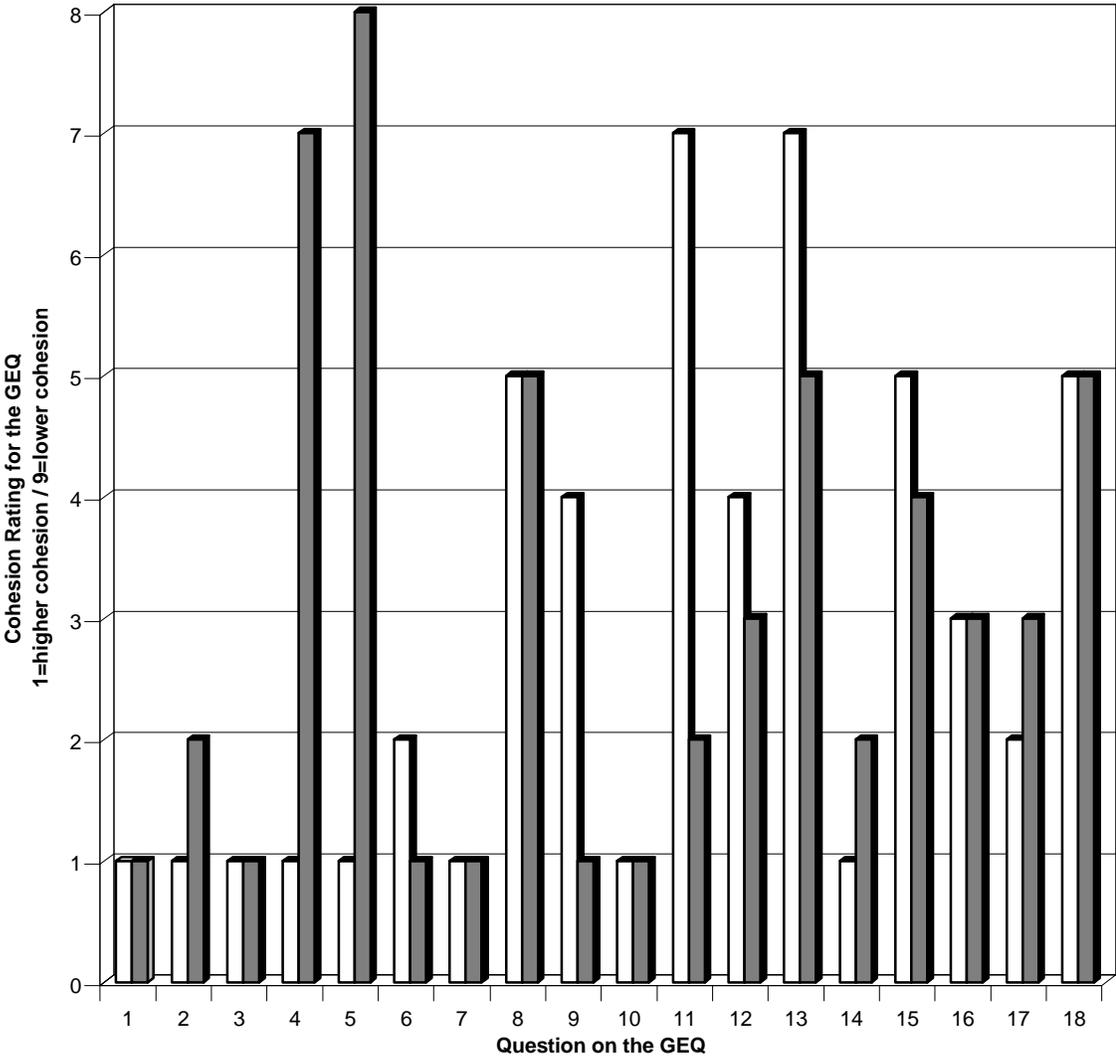
Appendix 4  
Comparison of Player 1's Pretest and Posttest  
Scores for the GEQ



Appendix 5  
Player 3's Comparison of Pretest and Posttest  
Scores for the GEQ



**Appendix 6**  
**Comparison of Player 5's Pretest and Posttest**  
**Scores for the GEQ**



Appendix 7  
Player 10's Comparison of Pretest and Posttest  
Scores for the GEQ

