IMPROVING SELF-EFFICACY IN COLLEGE STUDENTS:
A MODIFIED ADVENTURE THERAPY PROGRAM

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Adventure therapy employs a technique in which therapists use controlled amounts of stress to bring about change in the behavior of clients. One of the domains in which adventure therapy reports improvement is that of self-efficacy. Perceived self-efficacy is the belief that individuals have in their ability to overcome and change their situation in life. This study examines the effect of a modified adventure therapy program on the perceived self-efficacy of college students who were enrolled in an Outdoor Pursuits course at a major metropolitan university. Students received 16 weeks of outdoor adventure therapy programming that culminated in a voluntary weekend camping trip. The students were administered the General Self-Efficacy (GSE) scale on the second day of class to determine a baseline level of self-efficacy to be compared to the posttest completed on the last day of class.

The study examined 3 consecutive semesters of archival data collected by the researcher while instructing the course. Fifty-six participants across the 3 semesters were usable for data analysis. The results show there is a significant difference between students' level of perceived self-efficacy from pre- to posttest, and no difference in the effect on gender, classification of students, or the participation of the student in the weekend campout. Therefore, the 16 week program improved students' perceived self-efficacy regardless of whether or not they participated in the weekend campout.
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CHAPTER 1
INTRODUCTION

Lead your child into nature, teach him on the hilltops and in the valleys. There he will listen better, and the sense of freedom will give him more strength to overcome difficulties. But in these hours of freedom, let him be taught by nature rather than by you. Let him fully realize that she is the real teacher and that you, with your art, do nothing more than walk quietly at her side. Should a bird sing or an insect hum on a leaf, at once stop your walk. Bird and insect are teaching him; you may be silent.

Pestalozzi

These words by Johann Heinrich Pestalozzi are indicative of the usefulness of the outdoors in educating students. One thinks of how man must have learned the very first lessons of life necessary to the survival of the race when nature truly was the teacher. The lessons were those that had true consequences and instilled the notion of persevering or perishing. The belief in themselves and their abilities to overcome and change their situation in life is what fuels individuals to achieve great things.

The role of the university has always been to improve individuals so that they may one day have the confidence to be the leaders of tomorrow. From its inception, the goal of the American higher education system has been to provide courses not only to educate the student in a given field of study but also to instill the belief that change is possible. With the emergence of a formal education system, it seems that the use of nature and the endless possibilities that exist when the outdoors is used as a classroom has been forgotten. Many of the lessons learned in the outdoors are those that help shape character and build self-confidence. The notion that educating people to believe in the possibility of change must take place; thus, diversity in opinions, beliefs, cultures, and educational needs must be provided by the university. According to Jonathan
Turner, “The end of all education ... should be the development of a true manhood, or
the natural, proportionate, and healthful culture and growth of all the powers and
faculties of the human being” (as cited in Foerster, 1937, p. 25). This statement speaks
to the professional development of students in order to better prepare them for the
many obstacles that lie before them after life at the university. Part of this development
must be the instilling of the belief that students can, with their own effort, overcome
difficulty. John Dewey stated that, “although there can be no guarantees that our efforts
will make our situation better, the improvement of our situation is a real possibility” (as
cited in Campbell, 1995, p. 13). This basic premise drives us to continue in the struggles
of life.

A key component in success is people's beliefs that their actions can and will
affect the outcome of their lives. Without such beliefs there is little incentive to take
action or persevere when faced with difficulty. These concepts are what make up the
theory of self-efficacy (Bandura, 2001a, 2001b, 1997; Benight & Bandura, 2004;
Fernandez-Ballesteros, Diez-Nicolas, Caprara, Barbaranelli, & Bandura, 2002; Sander
& Sanders, 2003). Simply stated, self-efficacy is the belief that an individual has in
his/her ability to control and affect the outcome of his/her daily life. Bandura (2001a)
defined self-efficacy as being “concerned with people’s beliefs in their capability to
produce given attainments” and went on to write that “the stronger the sense of
personal efficacy, however, the greater the perseverance and the higher the likelihood
that the chosen activity will be performed successfully” (p. 1). This is to say that people
with high self-efficacy not only believe that they can perform the task at hand but have a
greater likelihood of completing it successfully. Producing students with a positive self-
efficacy belief should be one of the goals of the university, thus equipping students with the tools they need to succeed.

The literature in higher education stresses that the way to ensure the democratic way of life is through education. Education is the vehicle that helps society learn that it can improve itself. According to Dewey, “Apathy can be overcome and citizens can be drawn to take an active part in the much more demanding democratic running of their own lives, but only if they can be convinced that this involvement has a chance of succeeding” (as cited in Campbell, 1995, p. 228); thus, producing students with high self-efficacy not only prepares them to become productive and proactive citizens but also furthers democracy and the American way of life.

In this information age with its wide range of technological advances, students must more than ever be balanced. Upon graduation students must have a healthy sense of self-efficacy so that they will be confident to use their education and to perform in the face of the numerous difficulties of life. It is the responsibility of the university to provide opportunities conducive to the development of the skills necessary for success. By teaching students that change is a reality and giving them the ability to adapt to new situations and the skills necessary to perform professionally, we provide them hope for tomorrow and ensure the longevity of the university, and ultimately democracy.

In a physical education course titled Outdoor Pursuits, modified adventure therapy techniques are used to instruct students how to survive and thrive in the outdoors. The technique is used with the hope not only of teaching students skills in the outdoors but also of helping them to develop a higher sense of perceived self-efficacy. Adventure therapy is generally thought of as the use of a novel setting (outdoors) and
risk elements to bring about new ways of coping with and overcoming problem behaviors. I developed the course using the principles of the adventure therapy process and modified them to fit the requirements of the university in order to produce a course that would not only teach students valuable skills and information but also provide the maximum conditions for the building of self-efficacy.

During this course students are taught numerous skills that will be used when the class takes a 3-day camping trip. Using the skills they have learned, students construct a 12-part trip plan in which all aspects of the outdoor experience are planned. Students will then implement that plan and go out to experience the great outdoors. The students learn first-hand what skills they have learned well and what they must relearn in order for them to create sound shelter, prepare meals, and participate in the activities chosen by the group. They will also discover which parts, if any, of the trip plan were completed by the group correctly. Upon return to campus, the students will then be involved in two processing sessions where they have opportunity to discuss all aspects of the trip by giving students an opportunity to explain the best and worst aspects of the trip physically, interpersonally, and emotionally. Finally, they are asked to relate experiences from the course and trip that correlate with their life goals.

Much has been written about the improved self-efficacy in participants who are involved in outdoor adventure therapy programs. One of the most important aspects of adventure therapy programs is the ability of participants to generalize their experience into other portions of their lives, realizing that if they can overcome challenges in the outdoors they can have confidence in handling the challenges of their daily lives.
The notion of overcoming difficulties that Pestalozzi referred to when discussing the use of the outdoors as an educational tool relates closely to what Bandura called perceived self-efficacy (as cited in Ford, 1981). Perceived self-efficacy is people's belief in their ability to perform and master novel or difficult tasks, or cope with adverse situations; basically, it refers to the amount of persistence individuals exert in the face of difficulty (Bandura, 2001a; Jerusalem & Schwarzer, 1995). Bandura, among others, also suggested that perceived self-efficacy produces a cross-domain effect, in that if people have high self-efficacy in one area it carries over into other types of challenges (Bandura, 2001a, 2001b; Sander & Sanders, 2003). Thus, improving students' perception of self-efficacy is paramount in the development of the whole person and preparing them for success after the university. The following section reviews self-efficacy and the sources that an individuals use for evaluating their levels of efficacy; this is followed by a review of the adventure therapy process; and finally a discussion is presented on how the two relate and were used to develop the course Outdoor Pursuits.

Statement of the Problem

Much research has been done on student development and the benefits of improving self-efficacy; however, research data on outdoor adventure programming and its effect on students in a semester-long course are virtually nonexistent. In order to determine whether changes in perceived self-efficacy occur during the semester, I analyzed archival data on students enrolled in Outdoor Pursuits who were given pre-
and posttests to describe the extent of change in perceived self-efficacy as one indicator for course evaluation.

**Purpose**

The purpose of the study was to determine the effects of an Outdoor Pursuits course on students' perceived self-efficacy.

**Research Hypotheses**

H1: There is no significant difference in perceived self-efficacy among students enrolled in Outdoor Pursuits from baseline to completion of the course.

H2: There is no significant difference in the change in perceived self-efficacy between males and females enrolled in Outdoor Pursuits from baseline to completion of the course.

H3: There is no significant difference in perceived self-efficacy among classifications of students enrolled in Outdoor Pursuits from baseline to completion of the course.

H4: There is no significant difference between reported levels of perceived self-efficacy and ethnicity of students enrolled in Outdoor Pursuits from baseline to completion of the course.

H5: There is no significant difference in pretest and posttest scores of perceived self-efficacy between students who participated in the weekend campout and those who did not participate.

**Definition**

*Perceived self-efficacy* is the belief one has in his or her ability to perform novel and difficult tasks or cope with adversity. Characteristics associated with this construct
are goal setting, effort investment, persistence in the face of difficulty, and recovery from setbacks. The score that students receive on the General Self-Efficacy scale (GSE), defines perceived self-efficacy for this study.

Limitations

Students in the study were involved on a voluntary basis; therefore, some subjects in the course refused to participate or dropped out during the semester.

Delimitations

The data were limited to a convenience sample of students enrolled in Outdoor Pursuits during fall 2004, spring 2005, and fall 2005, therefore limiting generalizability to students enrolled at the research site. My techniques for the delivery of the treatment will improve over the course of administering the modified adventure therapy program for 3 consecutive semesters.

Assumptions

The assumption was made that students would answer the test instrument truthfully although students could answer the questions in the way they believed I wanted the questions to be answered. I also assumed that the students in Outdoor Pursuits would remain in the sample until completion of the test, realizing that some students might drop the course or might not complete the survey completely.

Significance

Documenting perceived self-efficacy among students enrolled in Outdoor Pursuits can show the changes, if any, that developed in students’ perceived self-efficacy between entry and completion of the course.

CHAPTER 2
LITERATURE REVIEW

Self-Efficacy

One of the basic roles of the university is to produce well-educated students with the confidence to take what they have learned in school and use it to benefit society and themselves. “Self-efficacy refers to our belief about our ability to execute control over our own level of functioning and the events that affect our lives. We depend on our self-efficacy to accomplish tasks, from the mundane to the complex” (Paxton & McAvoy, 2000, p.202). In order for students to be successful, they must believe that they have the ability to overcome adverse circumstances. Jerusalem and Schwarzer (1995) stated that “the construct of perceived self-efficacy reflects an optimistic self-belief “ and “ the belief that one can perform novel or difficult tasks, or cope with adversity in various domains of human functioning” (p. 35) The authors explained that having high perceived self-efficacy is associated with goal setting, effort investment, persistence when faced with difficulty, and recovery after setbacks. These qualities provide individuals with a “positive resistance resource factor” that they can draw upon to better navigate and achieve success when faced with challenges (Jerusalem & Schwarzer, 1995, p. 35).

Having a high sense of perceived self-efficacy is essential for individuals to be both mentally healthy and socially successful, because not having this attitude can result in depression, anxiety, and helplessness (Bandura, 1997; Sander & Sanders, 2003; Schwarzer & Scholz, 2000). In fact, a recent study by Benight and Bandura (2004) examined the effect of perceived self-efficacy and the recovery of individuals who have experienced some sort of major trauma. The findings indicated that a high sense of self-efficacy was the focal point of posttraumatic recovery. “People who believe
they can surmount their traumatization take a hand in mending their lives rather than have their lives dictated by adverse situations” (Benight & Bandura, 2004, p. 1144). In short, people with a high sense of efficacy are more likely to endure and succeed even when faced with the most difficult of situations.

There has also been much research on developing academic self-efficacy. According to Schunk and Pajares (2002), this development begins in the home, with parents providing their children an atmosphere of challenging discovery and opportunities for success. This allows children to be inquisitive and helps to promote an understanding of their surroundings and how they can effectively interact with their environment. Allowing children the opportunity for mastery experiences helps to build their self-efficacy and motivates them to work on activities and learn new information and skills. It is with these experiences of success that efficacy is developed (Schunk & Pajares, 2002). Paxton and McAvoy (2000) pointed out that self-efficacy is the culmination of all past experiences, both good and bad. Failure is an important component in creating a strong sense of self-efficacy because it leads to the adaptation of past experience to produce another attempt at mastering the problem. These experiences are then incorporated into future attempts at task completion (Paxton & McAvoy, 2000).

Bandura, Barbaranelli, Caprara, and Pastorelli (1996) reiterated the importance of parental guidance, showing that parents with higher efficacy and socioeconomic status have children with higher academic self-efficacy due to their influence in helping their children believe they can be or do anything they set their minds to do. The authors noted that children with a high sense of efficacy were less inclined to participate in
activities that were troublesome and less likely to be subject to peer pressure (Bandura et al., 1996). With this high sense of efficacy these students are more likely to pursue higher levels of education, seek to obtain more prestigious employment, and persist longer in the face of difficulty (Bandura, 1977, 1997, 2001a, 2001b; Bandura et al., 1996; Benight & Bandura, 2004; Paxton & McAvoy, 2000; Sander & Sanders, 2003; Schwarzer & Scholz, 2000; Schunk & Pajares, 2002).

Studies have shown that differences in self-efficacy exist between genders. The research has shown that boys and men tend to report higher self-efficacy for math, science, and technology even though actual achievement shows little to no difference, and in the language arts, where women typically score higher academically, there is no difference in efficacy. A reason given for the difference is that boys tend to be more self-congratulatory whereas girls tend to be more modest when discussing their talents. When considering the difference between minorities some research has shown that minorities score lower in perceived confidence than White students, although much of the research has been confounded by comparing middle-class White students with lower class minority students (Schunk & Pajares, 2002). Graham (1994) reviewed literature on the achievement of African American students and White students and indicated that, once socioeconomic status is controlled there is little difference between the two.

Bandura (1977) discussed three basic components that comprise an individual’s perceived self-efficacy: magnitude, strength, and generality. Magnitude refers to the degree of certainty associated with people’s belief that they can perform the task successfully. A person’s magnitude depends on how difficult the task is perceived to be
and how certain he/she is about task completion. Strength is concerned with the amount of time that an individual will continue to persist in the face of difficulty. Individuals with low strength in their perceived self-efficacy might quit after one or two failed attempts, whereas those with high strength would continue multiple times, often until success is achieved. Finding success after multiple failures is an important part of developing a positive sense of self-efficacy. The experience teaches the individual the value of continuing and adapting efforts, thus strengthening the individual’s efficacy, which leads to generality, the degree to which the person is able to transfer the experience of success in one area and apply it to another. One individual may generalize the experience only to those that are similar, whereas another could generalize the experience to a number of situations (Bandura, 1977).

Individuals use four sources of information assess their level of perceived self-efficacy (Bandura, 1977). The first is performance accomplishments, which are basically the experiences of success. Bandura explained that this domain is based on mastery experiences upon which the individual can base future courses of action. Success raises the expectation of mastery while failure lowers it; therefore, experiences should be designed to allow a graduated level of difficulty that reduces the likelihood of failure early in the course. However, later in the course the tasks should be designed to require the person to persevere through some difficulty, because, if the success is always easily attainable, the result is often that, when faced with difficulty, the individual becomes discouraged rather than search for other responses to the problem. The experience of success after failure helps the individual learn that with sustained effort even the most
difficult tasks can be accomplished. This often results in the transfer of the behavior, not only in areas that are similar but also to situations that are substantially different.

Using a vicarious experience is another method for improving self-efficacy when people see others who are similar to them having success, the result is often a belief that they can have the same success. It is also important for individuals to observe successful models who are vastly different from themselves, thus creating a more reasonable basis for increasing their own sense of self-efficacy. Observing the repeated successes that others can have from sustained effort helps the observer to overcome debilitating fears of inadequacy.

Verbal persuasion is also used to assist in the development of a positive self-efficacy. Persuading individuals to believe in themselves and their abilities increases their chances of success. This can be achieved by using verbal cues that encourage the individual to participate in the task. The effect, however, is often weaker than those that arose from personal accomplishment because their frame of reference is not from actual experience. Although verbal persuasion is a weaker method for improving an individual’s perceived self-efficacy, it can be used to influence people to believe that they have the capabilities to perform a difficult task, and therefore a mastery experience can take place. The persuader must be careful to arrange the activity in a way that will bring about success and avoid the use of failure too prematurely.

Finally, emotional arousal can affect perceived self-efficacy. People rely on their state of emotional arousal to determine their personal competency in performing. The level of anxiety that people have when faced with difficult activities directly affects the outcome of the event. If their arousal is high they are less likely to perform the task
This is the premise upon which Csikszentimihalyi (1975) based his concept of flow. Flow is the state of emotional arousal that is ideal for individuals to perform at their highest level. If too much anxiety exists, individuals experience a debilitating effect, and if too little anxiety exists, people experience boredom (Csikszentimihalyi, 1975). Thus, the therapist must be careful to examine the difficulty of the task and the abilities of the individual. Reducing stress, building physical strength, and learning how to interpret physical sensations are all important for overcoming elevated emotional arousal. People use physical and emotional states to judge their capabilities. Those with low self-efficacy interpret anxiety and depression as personal deficiencies and fatigue and pain as physical deficiencies rather than stressors that motivate action and the need to be more involved in physical activity (Bandura, 1977, 1997).

Recognizing that perceived self-efficacy is developed from undergoing new and difficult experiences where the opportunities for feelings of accomplishment exist, a natural fit for improving an individual’s perceived self-efficacy is adventure therapy. Adventure therapy (AT) is the purposeful use of risk to bring about a change in an individual’s behavior. The process takes individuals to a novel setting, situates them in a group of virtual strangers, and requires them to perform difficult and risky tasks with the shared goal of producing a mastery experience. In order for individuals to change their behavior they must first believe that the change can be accomplished through their actions; therefore, facilitators are careful to develop programs that begin with relatively easy tasks and graduate to increasingly more difficult ones. These tasks range from cognitive challenges that require persons to state their name and items of interest to
physical feats performed from 40 feet off the ground on belay. The following is a
discussion of the field of AT and how it relates to improving an individual's self-efficacy.

Adventure Therapy

To begin one must first understand that adventure therapy (AT) is a part of the
profession known as experiential education. In particular its hierarchical structure is
headed by the profession of experiential education, then the discipline of outdoor
education, in which one of the branches is adventure education, and within that branch
is the therapeutic application of adventure. Experiential education is loosely defined as
learning by doing with reflection. Born from the pragmatic movement, experiential
education is a field dedicated to the philosophy that learning only possesses value if it is
practical and can help the individual apply the lessons to everyday life (Priest & Gass,
2005).

The next section presents adventure therapy and what it purports to do. In
general, most programs in adventure therapy are described as a course of work in
which participants and staff work together in an unfamiliar setting (outdoors) to
accomplish a positive change in behavior through the use of physical activity, controlled
amounts of stress, small group structure, and the processing of new information and
skills (Austin, 1997; Gass, 1995). The questions that seem to reverberate in the minds
of those who are researching its usefulness are (a) What are the benefits of being
involved with adventure therapy? (b) does it really work? and (c) are there any lasting
effects?

Adventure therapy, also known as wilderness therapy, adventure-based
education, experiential education, adventure-based programming, and adventure-based
counseling, to name a few, has received a great amount of attention in research in the past 20 years. Adventure therapy includes a variety of different activities. Some of these include: problem-solving tasks, cooperative activities, trust activities, initiative games, low and high ropes courses, rappelling, backpacking, canoeing, rock climbing, and wilderness camping trips. Through these activities, participants experience emotions such as excitement, surprise, understanding, fear, and trust. Taking risks and learning through experience are accompanied by having fun and processing the adventure experience so that a deeper understanding of self can take place (Austin, 1997).

The use of adventure programs such as ropes courses, day hikes, camping, rock climbing, and wilderness trips have all been used in order to produce positive outcomes. These positive outcomes include self-esteem, communication, self-efficacy, locus of control, trust, decreased drug use, decreased reconviction rate, and even a reduction of sexual offense behaviors in a wide variety of populations ranging from adolescents to adults (Anderson et al., 1997; Austin, 1997; Bennett, Cardone, & Jarczyk, 1998; Berman & Davis-Berman, 1995; Dunning, 1994; Gass, 1993; Gillis, 1995; Long, 2001; McNutt, 1994; Mossman, 1998; Pommier & Witt, 1995; Simpson & Gillis, 1998). Many researchers have reported the positive effects in participants upon completion of AT programs, but how are these outcomes obtained and are they sound findings?

This review examines several articles that report outcomes from AT programs and describes the methodology used in each in hopes of determining a common thread. From this common thread, a discussion ensues about whose relevance to improving perceived self-efficacy and the modifications made to develop the Outdoor Pursuits
Program. In order to examine the usefulness of adventure therapy as an avenue for change, a brief description of its history and a theoretical framework follows.

The History of Adventure Therapy

The origins of adventure-based therapy can be traced to several sources. One of the earliest sources is the 1930s model for juvenile corrections. This model was called “Forestry Camp,” which used outdoor work programs, along with counseling and education, in an attempt to produce change in juvenile offenders. In the 1940s, Outward Bound began an outdoor program to teach seamen to work together under stressful situations. It was not until the 1970s that the field of adventure therapy began to produce a great deal of literature. These reviews indicated that adventure therapy could help adolescents increase self-esteem and self-worth, thus reducing antisocial behavior. Since that time, numerous adventure therapy programs have come into existence, such as VisionQuest® National, Ltd. (Vision Quest, Downington, PA, www.vq.com), Outward Bound, Associated Marine Institutes (Associated Marine Institutes, Tampa, FL, www.amikids.org), Wilderness Conquests, and Project Adventure (Gass, 1993).

With all the problems that today’s youth face, including drug addiction, family violence, peer pressure, and broken homes, not surprisingly many young people are being labeled “at risk.” The problem seems to be the lack of relationships between adults in positions of authority and the youth in the community. This is really the birthplace of the treatment known as adventure therapy. These programs take at-risk youth and place them in an unfamiliar setting where the uses of stressful situations are implemented in the hope of changing unwanted behavior (McWhirter & Jeffries, 1995).

At-risk youth include a wide-ranging section of our population. They can come
from the wealthiest or poorest backgrounds (Dunning, 1994). The term at-risk youth has become a popular label to use to describe those who have limited potential to become productive adults in society. These young people become at risk when they encounter problems at home, at school, or in the community. At risk can be defined as “a set of apparent cause and effect dynamics that places the child or adolescent in potential danger of future negative events” (McWhirter & Jeffries, 1995, p. 18). The at-risk term suggests that the behavior may not be current, but without intervention most likely will be.

The common thread among at-risk youth is poor parenting, which includes negative, aggressive, and inconsistent discipline; physical and sexual abuse; psychological and emotional trauma; poor school performance and the inability to maintain meaningful relationships (McWhirter & Jeffries, 1995; Robertson, 1995). Manifestations of the abuses result in offending behavior such as destructive actions, self-harm, sexual acting out, truancy, drug use, abuse of property, antisocial behavior, and constant challenges to authority figures (McNutt, 1994).

**Adventure Therapy Process**

Nadler (1993) presented a theoretical framework for the adventure therapy process. The following is a summary of the eight components that make up the adventure therapy process.

1. The client: Clients enter the adventure program in many ways; some volunteer; some are sent by parents; and others are sent by the courts. All clients come into the program with some preconceived notions about the experience. The hope is
that they come with the idea a positive outcome will result from the experience. The truth is that many of the clients come not knowing what will happen.

2. Disequilibrium:

This disequilibrium is an internal conflict between cognitive processes, a psychological tension or pressure that each individual attempts to lessen. It is a moment or moments of emotional intensity, dissonance, or disorder. In attempting to reduce this tension, individuals often try a new behavior or change in attitude or belief. (Gass, 1995, p. 62)

Disequilibrium can also be described as stress, which causes uncomfortable anxiety that stimulates the client to behave in new ways. By involvement in these types of activities that push clients past their comfort zone, the process of forming new ideas and behaviors can begin.

3. Novel setting: When clients are placed in an unfamiliar or novel setting, individual barriers can be broken down. This allows the furtherance of the reshaping of ideas. This experience can be described as a unique physical and social environment because the group is made up of virtual strangers and the setting is unlike anything the participants have experienced before. A heightened sense of arousal is the natural result.

4. Cooperative environment: By entering an atmosphere that requires cooperation rather than competition, the clients develop a bond of trust which helps to produce group cohesion. This cohesion is further cultivated by a structure that focuses on common goals and discussion, both personal as well as group. By working together clients learn that they can count on each other to help complete a task.
5. Unique problem-solving situations: Clients are placed in situations where they must use problem-solving skills to complete a given task. The tasks start as relatively simple and continue to become increasingly difficult. These problems can be solved only when group members rely on each other and their mental, emotional, and physical resources. This provides opportunities for success that are needed to build the self-image of the individual.

6. Feelings of accomplishment: The success realized from the problem-solving activities leads to increases in self-esteem, self-efficacy, belief in self, problem-solving abilities, trust, group cooperation, and skill development. Sometimes, however, as much or more can be gained through a failed experience in which the participant learns a new response as a result.

7. Processing the experience: Processing the experience is one of the most critical steps in the process. This processing is what helps clients make applications to their life. The clients are encouraged to express how they feel after the experience and what insights they may have. They are also given feedback for both positive and negative behaviors.

8. Generalization and transfer: Generalization and transfer are the goals of the adventure program. The discussion during the processing stage leads to this final stage of the adventure program. Metaphors are used to help clients make application of the adventure experience to real-life situations. The leader uses an open-ended approach that permits clients to use their own interpretation of the experience and to discuss what metaphoric links they have made to their life situation (Nadler, 1993).
Priest and Gass (2005) presented Walsh and Golins’s 1976 process of AT. The process, although using different terminology, basically reiterates the theoretical concepts that Nadler (1993) pointed to as being necessary for the process to be successful. Walsh and Golins (1976) described seven key elements that make up the AT process: the learner, the prescribed social environment, the prescribed physical environment, the tasks, a state of adaptive dissonance, mastery of learning, and reorganization of meaning and direction of the learner’s experience. The authors explained that the process begins with willing participants, places them in a unique environment both physically and socially, causes them to perform tasks that are risky and foreign, which produces a state of dissonance that results in new behaviors, leading to an experience of mastery that can then be used to reorganize the belief system of the participant in order to provide the transference of the experience to a generalization of success to other situations (Priest & Gass, 2005).

According to Gillis (1995), “The power of adventure therapy lies in the metaphoric associations people are able to make that enhances their ability to transfer lessons learned in the experience into behavioral or attitudinal changes in their life” (p. 8). By understanding the principles of the adventure therapy process and what conditions need to be present for change, the adventure therapist can create individual programs for each individual based on his/her needs. This includes strategic programming that might increase one person’s stress level while decreasing another’s in order to provide the maximum condition that will allow change to occur. Taking clients to the edge of their comfort zone and beyond is the name of the game.

Adventure Therapy Programs
The following is a review of the most recent literature reporting the efficacy of adventure therapy programs. Bennett et al. (1998) reported the effects of a camping program in conjunction with a traditional 12-step addiction recovery program. The authors used an experimental design in order to determine the usefulness of the addition of AT in the recovery process. The groups consisted of 13 men and women in the treatment group and 18 men and women in the comparison group, with a mean age of 36. Both groups were enrolled at the Haymarket Relapse Prevention Program and self-selection was used to form the groups. Participants in each group completed pre- and posttests and were given a 10-month follow-up interview by staff that were unaware of which group the participants came from.

The treatment group received the additional component called the Algonquin-Haymarket Relapse Prevention Program (AHRP). This program utilizes a 3-day outdoor adventure trip at Camp Algonquin in which both the treatment group and their therapist from Haymarket were involved in a multimodule treatment program. A unique point in this program is that the staff from AHRP was cross-trained in both addiction recovery and recreation/adventure therapy.

The program was made up of five parts (Bennett et al., 1998). Community meetings were held both in the field and around the campfire at night. These meetings were used to process the events of the day or any occurrence that needed immediate attention. Journaling was used to facilitate learning by allowing the participants to record their experiences during the program and, using the metaphors from the experience, they could generalize learning to daily life. The journal also served as a tangible record of recovery upon return to the Haymarket program.
A particularly interesting use of the Native American craft of making dreamcatchers was also employed. This craft focuses on moving from the past to the present. The dreamcatcher is a circular object made from natural objects using an intertwined webbing system to hold it together. The purpose of the dreamcatcher for the Native American is to catch bad dreams and allow only the pleasant ones to pass through. During the construction of the craft the participants were encouraged to draw metaphoric parallels to their recovery process. These real-life parallels are what affect the behavior of individuals when they are actually coping with the stressors that exacerbate the unwanted behavior. The web for these individuals would be the mechanism that they themselves construct, from their own experience, to overcome stimuli that cause unwanted behavior.

Wellness/relaxation workshops were used to promote healthy forms of stress management and reasons for functional leisure involvement. The program used the HALT (Hungry, Angry, Lonely, Tired) concept and introduced the antidote: nutrition, relaxation, socialization, and exercise. Encouraging the participants to look to themselves for their answers to the reasons for the feelings.

Finally, two 4 hour experiences on the challenge course elements were completed in order to add the necessary levels of stress to produce disequilibrium. The first experience focused on team building, problem-solving, and leadership, while the second focused on trust, conflict resolution, and support systems. Throughout the program therapists emphasized the natural parallels pertaining to the 12 step program.

The researchers measured each group in the following areas: drinking-related locus of control, stress arousal, confidence in problem-solving, frequency of negative
thoughts, and alcohol craving. Chi-square and independent t-tests found no significant difference between groups at pretest and the results of the posttest and follow-up are as follows. There was no statistical significance in drinking locus of control, stress, and problemsolving; however, there was a significant reduction in autonomic arousal, frequency of negative thoughts, and alcohol craving in the treatment group. Although no significant differences were reported between groups at the 10-month follow-up, self-reported abstinence was 69% for the treatment group and 42% for the comparison group (Bennet et al., 1998).

Long (2001) used symbolic interactionism with girls who had emotional and behavioral disorders, who were residents of a long-term wilderness camp. The convenient sample for the study consisted of 9 girls, ranging in age from 14 to 17 years. Five Caucasian and 4 African American females formed the sample to be studied. The girls were exposed to AT in the form of ropes course initiatives, climbing wall experiences, overnight hikes, and canoe trips. The time spent in each element per month was about 12 hours on the low ropes, which are some type of problem-solving initiatives conducted on the ground; 4 hours on the high ropes, which are conducted at times 40 to 60 feet off the ground using belay devices on the participants to add the risky elements needed for disequilibrium; 2 hours on the climbing wall; and 8 to 42 hours on trips.

The use of symbolic reflection activities allowed the girls to report what they felt were important elements of the AT program and how they affected them. By using this process the girls were able to make their own generalizations about the activities and
their relevance to their lives. The data were collected using in-depth interviews at three separate times.

Using the constant comparison method to analyze the data, three themes emerged: new member perspective, established member perspective, and advanced member perspective. These themes emerged from three distinct stages of treatment in the program. The new member perspective was the initial stage of development marked by excitement and enjoyment in the AT program. The girls were generally unsure about trusting one another as well as participating in the activities. In the established member stage the girls began to state an understanding that the experiences related to their treatment issues and that trust of each other and self was an important component in achieving their desired goals. In the final stage, advanced member perspective, girls viewed the AT program as group centered and demonstrated the ability to incorporate what they had learned from treatment to the ropes and from the ropes to treatment. They also expressed the importance the activities had played in their treatment and began to role model positive behaviors such as trust, positive attitude, and willingness to learn (Long, 2001).

Although the qualitative data reported in Long’s (2001) study cannot be quantified, the positive results of the study are encouraging. The study clearly showed a positive change in attitude and understanding from the initial stage through completion. The lack of a control group and follow-up, however, hurt the study’s power and generalizability.

Mossman (1998) examined the use of AT with prison inmates to help with the reduction of recidivism upon release. The program consisted of a 2-week fitness training
program and skill development, followed by a 5-day expedition. Activities during the 2-week training period consisted of equipment training, challenge course experiences, survival skill attainment, day hikes, rappelling, rock climbing, and caving. After completing the 2-week training period the highly adventurous expedition took place. The expedition required the inmates to use what they had learned in the training in order to perform extended hikes, traversing mountain ranges, and crossing fast-moving water all while carrying the necessary equipment for survival. As can be imagined certain prisoners were excluded due to risk factors.

Mossman (1998) reported three separate study results from an outdoor adventure challenge program (OACP). The first study compared past OACP participants with a matched control group of inmates who had not received the program. There were 84 men and women in the treatment group, 12 individuals who refused to participate, and 84 men and women in the comparison group. The groups were selected for the study based on length of time at large, gender, and ethnicity. Comparisons were made evaluating reconviction, number of reincarcerations, seriousness of offenses, time before first offense, and rate of reconviction. The data, although not significantly different, showed that the OACP group on average had a lower number of reconvictions and reincarcerations, were convicted of less serious crimes, and remained at large for a greater period of time before the offending behavior reoccurred. Interestingly, the highest reconviction and reincarceration rate of all the above mentioned were those inmates who refused to participate in the OACP program.

The second study was a semi-structured interview with 6 participants who had not been released, 6 participants who had been released but not reconvicted, and 4
participants who had been reconvicted (Mossman, 1998). All but 1 of the participants found the program to be of value, and 9 stated that the program was the reason that they had changed their life.

According to Mossman (1998) true experimental design was used to conduct the third study. The study used psychometric measures to determine motivation to change criminal behavior, interpersonal trust, self-efficacy, group cohesion, and well-being. Inmates were randomly assigned to either the OCPA (n = 12) or the control group (n = 14). The measures were administered both pre- and posttreatment to both groups. Using the Wilcoxon matched-pairs assigned ranks method the researchers found significant differences in group cohesion, interpersonal trust, and self-efficacy in the OACP group when compared to the control group. There was no significant difference in readiness to change, although the OACP group did improve their level of willingness to change, while the control group remained the same, thus supporting the idea that the program does improve the inmates’ motivation to change their way of life upon release. Overall the study showed that those inmates who participated in the AT program were reconvicted less often, committed less serious crimes, and remained at large for greater periods of time before offending behavior reoccurred (Mossman, 1998).

In a study by Anderson, Schleien, McAvoy, Lais, and Seligmann (1997), the authors cited numerous studies that have shown the positive effects of therapeutic adventure in the areas of self-concept, self-esteem, self-efficacy, trust, improved health, group cooperation, and skill acquisition. However, these results have occurred primarily in populations of similar abilities or behaviors. The authors collaborated to create a program that would place individuals with and without disabilities together in an
integrated adventure program in order to determine what attitudes, relationships, skills, and lifestyle changes would occur.

A 2 1/2-year longitudinal study was conducted using participants randomly selected from a volunteer pool. There were 12 participants with disabilities and 14 without, with ages ranging from 22 - 65; and there were equal numbers of males and females. The participants were placed in two groups. Each group participated in baseline sessions to complete canoeing skills, assess attitudes, and make introductions of group members. In the 1st year, only Group 1 participated in a 6-day and a 3-day wilderness canoeing trip, and in the 2nd year, both groups participated in the intervention. A sociometric assessment was administered prior to each trip, and an attitude assessment was administered after the second and fourth trip while canoeing skills were assessed daily. Also, follow-up interviews using qualitative methods were performed 4 to 6 months after the conclusion of the second and fourth trips.

The findings of the study were consistent with results found in other uses of AT. The researchers found that at the end of the 2 years, both groups showed positive gains in friendship development, group cohesiveness, skill acquisition, attitude, personal growth, and lifestyle change. These gains were reported in those with and without disabilities (Anderson et al., 1997).

Autry (2001) presented a study on at-risk females who were residents of a psychiatric rehabilitation center. The study’s purpose was to determine the perception the girls had about themselves after an AT program and what meaning was attributed to the experience. The 9 girls, 1 African American and 8 European Americans ages 13-18, were involved in an intensive 21/2-month residential wilderness camping program
where the girls would live while in treatment. Also included in their treatment were adventure therapy programming components such as: 3- to 4- day backpacking trips in the mountains, day hikes, and high and low ropes initiatives which were provided once a week for 4 hours.

All 9 girls were interviewed once, and 7 girls participated in the follow-up interview occurring 4 days to 3 weeks after their initial interview (Autry, 2001). Using the constant comparison method, I was able to group together themes that arose from the qualitative data. Four themes emerged from the process. The AT experiences brought about an awareness of trust of self and others, a sense of empowerment, improved teamwork, and a recognition of personal values. Again, this research further suggests that the participants placed value on involvement in AT programs. The weakness of this study, which was brought out by the research, was the lack of transfer from the activities to their treatment process. Minimal opportunities were provided to assist the girls in processing the experience of the AT program as it related to the issues present in their treatment, weakening the potential for real-life parallels gained from generalizing the adventure experience (Autry, 2001).

Simpson and Gillis (1998) presented a study in which AT was used with juvenile sex offenders. These adolescent boys had been engaged in acts such as child molestation and rape, which if they were adults, would have been punishable by jail time. In 1995, Project Adventure developed the Legacy program, a long-term program for juvenile sex offenders. The Legacy program is a 12-bed 10-month minimum residential program which specializes in the treatment of juvenile sex offenders. Simpson and Gillis (1998) summarized the program’s components and 3 years of
findings with 24 boys, of whom 9 were African American and 15 were Caucasian, with a median age of 14.4.

Legacy stands for learning empathy, gaining acceptance, and changing yourself. This acronym is used as the initial goals for the participants of the program because the key to ultimately changing sexual offending behavior is to learn empathy for the victim (Simpson & Gillis, 1998). The core of the program lies with the use of a behavior modification technique called the full value contract (FVC). The FVC is made up of five stages with four levels in each. Participants cannot move onto the next stage of the FVC until they have successfully completed each level. Each level achieved brings the boys a step closer to their end goal.

Simpson and Gillis (1998) provided a complete description in table format of the stages and levels that can easily be followed and understood. They also provided a schedule of a typical week in treatment, items such as morning meditation/visualization, group processing of key terms, journaling, ropes course initiatives and their accompanying processing foci, and adventure activities which are used strategically to maximize each concept being taught.

Another component of the legacy program was the use of group processing sessions (Simpson & Gillis, 1998). “Group” is used as a formal, structured way in which participants and staff can confront behaviors, convey feelings, and discuss the consequences of unwanted behaviors. Goal setting and the ability to carry them out are considered to be the key at Legacy; without successful completion of goals, participants could not be moved to higher levels or stages towards completion of the program.
The final component of the program is the adventurous activities. Once a month a week-long camping expedition was conducted (Simpson & Gillis, 1998). These campouts allowed the participants to apply the skills they had learned and to practice problem solving and cooperation. A full range of low and high ropes course activities is also provided in conjunction with the treatment plan.

According to Simpson and Gillis (1998), the results of this program have been positive for the clients who successfully completed the program. As mentioned earlier, the first step in the recovery process is empathy for the victim; upon entry to the program the boys admitted to molesting on average two victims, and by completion, on average five, a strong indication that the development of empathy had taken place. Of the 24 boys in the study, 12 had exited the program, only 5 in the planned way. Impressively, none of the boys who completed the program had reoffended at the time of publication. Although results are positive and the highly structured nature of the Legacy program intuitively appears to be sound, the small number of boys upon which to base results inhibits the power of such findings (Simpson & Gillis, 1998).

The strongest case for support of AT and the use of its various programs came in the form of meta-analytic research. Neill (2002) examined five meta-analyses of the effects of outdoor education programs. Meta-analysis is a method of representing the research results of several studies by pooling the findings of a single research question from many different sources. Effect size is used to report the results of meta-analysis. Basically, effect size represents the quantifiable amount of change that has occurred during treatment, with 0.2 representing small effect, 0.5 moderate, and 0.8 large effect. Neill's analysis encompassed more than 150 studies and over 12,000 participants.
Programs involved both youth and adults who were involved in outdoor education, camping, adventure programming, and ropes courses focusing on locus of control, self-concept, self-esteem and teamwork.

According to Neill (2002), of these five, meta-analysis reported that an overall small-moderate (0.3 - 0.4) effect size was found. The lowest effect size (0.2) was found in camping programs that were not also associated with behavioral programming, and the largest was with the use of ropes challenge courses, with an effect size of (0.51), indicating that the higher amount of structure to the program leads to a greater amount of impact. Studies that examined long-term effects reported an average effect size of (0.34), and with as much as 18 month follow-up, ongoing improvement was (0.17), which means that some of the lasting effects of the AT program were still maintained.

Also of interest is the high effect size on therapeutic programs with behavioral problem participants (Neill, 2002). Studies using clinical measurement scales found a very high effect size (1.05) in these participants; however, these large effects could be due to the greater amount of improvement needed than those without behavioral problems. Neill also compared AT with psychological treatment programs. A meta-analysis of over 1 million participants in psychotherapy found an overall moderate (0.47) effect size. When compared to the small-moderate (0.3 - 0.4) effect size found in this study, AT can be seen as a therapy that is able to produce changes. Overall, programs that had a therapeutic goal as their primary focus had the highest effect size, residential or semi-residential programs were more effective, and a highly structured organization of program components produced the greatest level of lasting effect (Neill, 2002).
Newes (2001) examined research practices in adventure therapy and compared them to psychological methodology. Her first point was the need for standardization in the field. A way in which this could take place is to provide a description of commonly used interventions and compile them in a manual. Collaborative efforts by professionals in the field would encompass the many varieties of techniques being used and allow therapists to draw from the experiences of the shared information. Another issue involves the design of the research programs being conducted. The nature of AT suggests that large groups cannot be studied due to the dynamics of adventure programming. More studies must be conducted using meta-analysis, which would allow researchers to report findings for greater numbers of participants. Also needed are regression studies. Regression analysis is a means for predicting which variables have the greatest effect on the program. None of the articles researched used this valuable research tool (Newes, 2001).

Although many changes should be made in research design in order to legitimize the field of AT, the reported results show promise. From the articles reviewed, although the research reveals no significant changes, some improvement has been reported across the board, especially as related to self-efficacy. In order to strengthen the field, researchers need to create standards of best practice, find ways to incorporate larger numbers in their studies, and use predictor analysis to determine the most useful components of the program.

Discussion

As can be seen from the articles presented, there are no standardized ways in which AT programmers arrive at the maximum condition to produce change, but clearly
some common elements exist in each case. In fact, on close examination, one can see all of Nadler's (1993) eight elements that make up the theoretical foundations of adventure therapy. All programs, of course, have participants or clients, try to create disequilibrium, place clients in a novel setting, emphasize the need of a cooperative environment, use unique problem-solving activities to provide opportunities for feelings of accomplishment, and finally, use some sort of processing takes place to foster generalization and transference.

Upon examining all the research, one quickly becomes aware that the key to AT programs is to place the individuals in situations that they have not been in before. Involving participants in these activities forces them to learn to rely on themselves and others to perform the task at hand. Once this task has been accomplished, either positively or negatively, the participants learn valuable lessons and can apply them in their lives. The feeling of accomplishment that comes from the experience can be used to improve self-efficacy. This then leads their learning of new skills and problem solving abilities, most importantly the ability to try new and challenging tasks, even when they have no frame of reference on which to base their decision.

I developed the Outdoor Pursuits course because he understands the principles of AT, the need to improve student self-efficacy, and the benefits of the use of adventurous programs such as ropes courses, day hikes, camping, rock climbing, wilderness trips, problem-solving activities, skill building, and the like in producing positive outcomes in self-esteem, communication, self-efficacy, locus of control, trust, decreased drug use, decreased reconviction rate, and even a reduction of sexual offending behaviors in a wide variety of populations ranging from adolescence to adults.
(Anderson et al., 1997; Austin, 1997; Bennett et al., 1998; Berman & Davis-Berman, 1995; Dunning, 1994; Gass, 1993; Gillis, 1995; Long, 2001; McNutt, 1994; Mossman, 1998; Pommier & Witt, 1995; Simpson & Gillis, 1998). The program uses low ropes initiatives, hands-on skill-building sessions, group problem-solving activities, an outdoor wilderness trip, and several processing sessions so that the students can learn and master skills and have the opportunity to make generalizations about the experience and their life situation. Most importantly, it is believed that the students have an environment conducive to improving their self-efficacy which, as research has shown, leads to a more confident and successful individual.

The first source that Bandura (1977) discussed is performance accomplishment, which is the successful completion of a task and the strongest source for individual assessment. This relates directly to the feeling of accomplishment that is one of the key components of the AT process. Therapists use an incremental design of task difficulty to provide the repeated feeling of mastery needed to build the participant's confidence in attempting the next new and more difficult task.

The vicarious experience is also present in AT. Clients are placed in groups in which they are then given unique and risky problem-solving situations in a cooperative environment. This dynamic provides individuals in the group the opportunity to see others experiencing success, thereby allowing them the vicarious experience needed to encourage them to act. Verbal persuasion is also used in the AT process. The leader uses verbal cues to encourage participation from clients who doubt their ability. Members of the group also provide these cues in order to help other group members overcome their fears and participate in the activity. The emotional arousal of the
participant is also a concern of the adventure programmer. Controlled amounts of stress are used to provide the necessary level of arousal to ensure the participation of the client, realizing that too much leads to debilitation and too little brings boredom.

The most important part of the AT process is the processing that leads to generalization. Processing the experience helps individuals make the real-life application of what they have learned through the activity. For example, with the use of processing techniques individuals who did not know how to cook on an open fire can glean from the experience of success that they can now have success in other pursuits foreign to them. The generalization process helps improve the individual's magnitude, strength, and generality of self-efficacy, which leads to individuals who are more confident, try harder, and succeed more often. If all the components for individuals to evaluate their level of self-efficacy are contained within the process of AT then the result should be the improved perceived self-efficacy of individuals participating in the experience.

The course Outdoor Pursuits PHED 1580 was developed to teach students environmental respect and the skills necessary to plan and participate in a weekend outdoor adventure experience. I determined that, by modifying adventure therapy techniques to fit the design of a semester-long course, the course’s goals could be met and student self-efficacy could be improved. Although recognizing that AT is primarily used in a therapeutic setting with individuals who have been placed in the program due to some sort of dysfunction, I believed that the techniques could be used in an educational setting with individuals who report no dysfunction and that the end result would be individuals with an improved sense of self-efficacy that would better prepare
them for the challenges of life. The course begins with an explanation of the novel setting in which the course will be taught, then utilizes group initiative games, skill building sessions, and group problem-solving activities, all to prepare the students to participate in a weekend camping experience.

An integral part of the course is the processing sessions. Students are provided with feedback on their performance during each class and are asked to state any generalizations they can make from the day’s activity and their life situation. The course ends with a final exam that requires students to discuss the most important elements of the trip plan and how they relate to success in their life. By using these techniques I hope that students enrolled in Outdoor Pursuits will not only learn and perfect the skills necessary to survive in the outdoors but also improve their perceived self-efficacy.

Table 1 illustrates how I addressed the eight elements of adventure therapy described by Nadler (1993) with the modified adventure therapy (MAT) program. Table 1 shows how each of the elements is contained within the program and how they were implemented in the delivery of the treatment.
Table 1

Comparison of Nadler’s AT Elements and the MAT Program

<table>
<thead>
<tr>
<th>Nadler's elements of the adventure process</th>
<th>Modified adventure therapy program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client</td>
<td>Students enroll of their own free will and have some preconceived notion of what the course will entail</td>
</tr>
<tr>
<td>Disequilibrium</td>
<td>States of dissonance are produced by low ropes initiatives, skill building sessions, group work, presentations, and the weekend campout</td>
</tr>
<tr>
<td>Novel Setting</td>
<td>Established both by the use of outdoors and the unique social setting the students find themselves in</td>
</tr>
<tr>
<td>Cooperative Environment</td>
<td>Stressed at each session: Everyone succeeds or all fail</td>
</tr>
<tr>
<td>Problem-solving</td>
<td>Every session has some sort of problem-solving situation in which the students must find a viable answer, whether these be physical or cognitive challenges</td>
</tr>
<tr>
<td>Feelings of Accomplishment</td>
<td>Can be obtained in every session. Here failure, if used correctly, is of equal importance because failed attempts produce successful adaptations</td>
</tr>
<tr>
<td>Processing</td>
<td>Takes place at the end of every session. The instructor asks what happened, what did you learn, and how can you apply it?</td>
</tr>
<tr>
<td>Generalization and Transferance</td>
<td>The opportunity for generalization exists in every session through the application of processing.</td>
</tr>
</tbody>
</table>

Bandura (1986) and Pajares (1996) warned researchers that they should be specific when testing for self-efficacy for use as a predictor of outcomes. The caution is that when one studies a general or global sense of self-efficacy the result can be confounded relationships and ambiguous findings that obscure what is being assessed. The researchers suggested that generalized self-efficacy instruments basically test the belief that individuals can make things happen without saying what these things are. The suggestion then is to use a test instrument that is domain-specific to the area one wishes to study and to avoid using instruments that derive composite scores from various subsections of the domain (Bandura, 1986; Pajares, 1996). In order to study the
The effect of the MAT program on the perceived self-efficacy of students enrolled in Outdoor Pursuits, Jerusalem and Schwarzer’s (1995) General Self-Efficacy (GSE) scale was chosen for the test instrument. The authors reported that the questionnaire is reliable for populations over the age of 12 with an alpha ranging from .75 to .91 and valid for the single construct of perceived self-efficacy (Jerusalem & Schwarzer, 1995). The aim of the scale is to predict coping with daily struggles and adaptation to setbacks.

One of the oldest questions known to education is How does the university produce well-educated and confident students? In the University of North Texas’ mission statement, one of the components related to the university’s commitment to student development states that the university “nurtures development of students by providing continuing opportunities for intellectual, physical, emotional, social, and career growth” (The university’s mission, 2005). I believe that all these areas of development can be accomplished by improving the perceived self-efficacy of the students through the use of modified adventure therapy techniques and the culminating experience of the weekend camping trip. The literature has shown that improving the perceived self-efficacy results in individuals who are confident in their ability to overcome difficulty and to persist longer; and as a result, they achieve successful outcomes more frequently. Therefore, if a student’s level of perceived self-efficacy is improved then he/she can better handle the daily stressors of life and have a greater likelihood of achieving success.
CHAPTER 3

METHODOLOGY

Research Site

The research was conducted at a university in the Southwest, which in this study is referred to as Southwest University. The university is a public research university offering bachelor’s, master’s, and doctoral degree programs with over 32,000 students.

Modified Adventure Therapy (MAT) Program

Drawing upon the common thread that emerged from the literature on adventure therapy (AT), I applied the eight elements of Nadler's (1993) AT process to the development of the outdoor pursuits course that served as a treatment in this study. One of the outcomes reported in adventure therapy research is an increase in the client's level of self-efficacy. The purposes and ends of adventure therapy interventions are a part of the field of adventure programming. This distinction is evident in Priest and Gass's (2005) discussion of the therapeutic application of adventure in the field of adventure programming when they explain that it produces outcomes that help clients “learn new strategies for coping with personal issues and then transfer the strategies to critical aspects of their daily lives” (p. 23). Therefore, I modified adventure therapy programming to fit a 16-week semester with students in a university setting.

Of particular importance to note are the ways in which the course was modified. First, the population studied did not present any known behavioral disorders, as does the normal or typical AT program. Secondly, the population was not in a clinical setting but in a university setting. An integral part of the program was the processing sessions, which concluded all sessions in order to promote generalization and transference of the
learning experience to their daily lives. Using the eight elements of adventure therapy presented as a frame of reference and an understanding of self-efficacy, the Outdoor Pursuits curriculum is discussed in the following section.

The course begins with an explanation of the novel setting in which the course will be taught, then utilizes group initiative games, skill-building sessions, and group problem-solving activities, all to prepare the students to participate in a weekend camping experience. Students come to the outdoor pursuits program for many reasons. In the past it was a required course for all students majoring in kinesiology who were seeking a teaching certificate. The requirements have now changed, making the course an elective to fulfill the physical education requirements for the kinesiology program at Southwest University. The age ranges from the typical freshman of 18 to the nontypical student, at 45 years. Whatever the age, reason, or circumstance that has brought them to the course they all come of their own free will and with some preconceived notion of what the course will entail. As with adventure therapy, the ideal client/student comes with the state of mind to gain the most from the experience.

The instructor uses controlled amounts of stress to produce the disequilibrium needed for the students to search for new responses to stressors. This is accomplished partially by the novel setting of the class as well as the unique activities in which the class participates. Each session is designed to create stressful situations in which the students must use either their physical or cognitive skills to solve the problem.

For students in higher education, meeting underneath the shade of a big tree to take roll and have class is a novel setting. Equally novel is the group of virtual strangers with whom they find themselves compelled to participate in challenge or low ropes
activities, skill-building sessions, group problem-solving, and the weekend campout. The course begins with six 1-hour group initiative sessions that meet outdoors unless the weather forces activities to be done in the gymnasium. The sessions are conducted using the basic format of icebreakers, deinhibitizers, and initiatives. Icebreaking activities are used to lower the students' social walls and are usually games that help the individuals learn names of the other group members or are activities that require individuals to act in ways that are the norm for society. Activities that force students to move outside their social comfort zone, and especially those that invade their personal space, are considered to be deinhibitizers. These activities continue the process of breaking down barriers, which assists in the development of relationships. This leads to the group's readiness for initiative activities. Initiatives are those activities that promote team building, group thinking skills, and synergistic processing, all with the common goal of producing feelings of accomplishment.

These activities range from low-impact cognitive games in which participants are given a scenario wherein they must figure out some solution, to extremely high-impact activities in which participants must use their physical skills in order to perform the task. Using activities that force the participants to act silly produces humorous situations that further the process of breaking down barriers and raises willingness to try new and progressively more difficult and precarious activities. The trick is to use the right amount of each kind to create the right level of stress for the participants to become fully engaged in the activities. Csikszentmihalyi’s (1975) theory of flow explains the feeling one gets when the stress of the activity matches the skill of the individual. When these two components match, the participant experiences a sense of being “in the zone” such
that a loss of time and all other thoughts often occurs. The key for the leader is to evaluate the participants' skills and abilities and to program accordingly.

The instructor explains that all the sessions will be conducted in a cooperative environment such that to achieve success the whole group is required to work together as a unit. This is particularly important for the development of the trip plan. The students will be divided into 12 groups, and each group will be responsible for one element of the plan. The students must then combine the parts and present the 12-part trip plan as a whole.

The students are placed in numerous problem-solving situations throughout the semester. These begin with the group initiatives and continue with skill-building sessions, production of the trip plan, individual and group presentations, and the weekend campout. All the sessions are designed to provide the opportunity for feelings of accomplishment, which as Bandura (1977) and Nadler (1993) suggested, is the strongest basis for individuals to improve their self-efficacy.

Finally, every session concludes with processing the experience. This is the most important part of the modified AT program because it allows students to draw their own conclusions about what the day's experience means to them. The instructor asks the students what they have learned from the experience and how they can apply it to their success in the class as well as in life. This processing assists the students in making generalizations and, hopefully, transference to real-life situations in which they may find themselves presently or in the future.

The 1st day of class begins with an introduction to the course, PHED 1580 Outdoor Pursuits (OP), and an ice-breaking exercise in which the students introduce
themselves giving five bits of information about themselves. The contrived
disequilibrium begins in the mind of the students when the syllabus is presented and the
course expectations are explained. Students are told that they will write a paper, take a
comprehensive final, make two presentations, learn outdoor skills experientially, and
create a 12-part trip plan that they themselves, as a group, will produce and implement
for a 3 day special event campout. Students are also told that the classroom
environment will be conducted using the democratic process when concerned with the
trip plan and the elements contained therein, with the instructor maintaining the right to
use executive power to overturn or redirect decisions. Finally, it is explained to them
that their eventual success in the course will depend on how well they professionally
present the trip plan as a group and its successful implementation during the campout.

The remainder of the period is spent on an icebreaker in which students give
their name, hometown, major, interesting fact about themselves, and favorite flavor of
ice cream. This exercise produces a little stress, mostly due to the fact that they will
have to speak publicly, although the relaxed atmosphere helps to allay these fears and
the exercise usually goes well. After the exercise is completed, students are told to try
to remember class members' names and information that may be useful for the
upcoming trip and to bring their calendars for the next class period so that the date for
the campout can be set.

Also introduced at this time is the concept of teamwork and the information that
they will be participating in six class periods (6 hrs) of low ropes course initiatives
designed to help them work together as a unit that will close with a formal group
processing session. The class closes with framing the novel setting in which they will be
participating for the next six periods, and they are told that should dress in athletic
clothing because they will be participating in low ropes course initiatives outdoors.

Session 2 begins with the students meeting in the classroom. Class begins
with the roll call, which is done at every class meeting, followed by announcements and
the description of the day’s schedule of events. Students are told to get their calendars
out and raise their hands for which weekend they are available for the special event
campout. At that time the highest number of participants chooses the weekend on
which the campout will take place. This serves two purposes: (a) It establishes the
group's common goal of going on the trip from the outset; and (b) it establishes the
deadline for their group project, the trip plan.

Once these housekeeping chores are completed, students are taken outside,
where they are told to form a circle. In order to promote the getting-to-know-you
process, students are introduced to the magic ball. When passed to them they are to
introduce themselves one at a time, passing the ball around the circle. This icebreaker
requires the students to state their name, along with five bits of information about
themselves, such as favorite and least favorite food, favorite outdoor activity, greatest
outdoor experience, and so on. The key is to advise the students to begin to recognize
people's skills and abilities that might be useful on the trip. For example, a student may
state that he enjoys playing the guitar. This information might be useful later when
planning the evening events around the campfire.

This activity leads into a more active game called group juggle. Students are
instructed to pass the magic ball to anyone in the circle as long as it is not the person on
either side of them. Students are then told that they must call out the name of the

individual to whom they are going to pass the ball before throwing it to them. All the
students are told to raise their hand and when they have received a pass they can put
their hand down; thus, each person receives a pass before the game round ends. The
game is then played again, but this time they must pass to someone different than the
first time. Next, the juggling part begins. Students are told to do the same activity
again, but this time they are to remember two things: (a) whom they throw to and (b)
whom they receive from. As the group becomes comfortable with the rotation, the
leader then challenges the students to see how many balls they can keep in the air,
going through the rotation. Many sizes and shapes of balls are used for this activity,
from tennis balls to footballs and Nerf balls to rubber balls. Some of the larger groups
have been able to get as many as 24 balls in the air at one time. With balls flying
everywhere this activity produces a great deal of laughter and the opportunity for
individuals to show their athletic ability. Also, with everyone yelling out the name of the
person they are passing the ball to and the confusion caused by multiple projectiles
being thrown in a small circular area, along with the chaos produced by errant throws,
the results are often sidesplitting.

The next modification comes when the leader asks the group how fast they can
get one ball through the complete rotation of the group. Then the leader gives the group
1 minute to strategize about how they can do it the fastest. Ideas suggested by group
members might include lining up in order in the circle or shifting to a straight line, and
finally another might suggest putting their hands in order from top to bottom and
dropping the ball through the hands to the ground. Groups have gone from a 58-second
first attempt to a 0.8 second final attempt. The process of discovering alternative
solutions for the same problem promotes creative thinking and leads group members to value other members’ input, thus encouraging a synergistic team-building atmosphere.

Group lift is the next activity. This deinhibitizer requires students to get outside their comfort zone and invade each other’s personal space. Students are instructed to get into groups of six, pairing up with someone of about equal size. The leader chooses a volunteer and demonstrates the activity. The object of the activity is to sit across from each other and stretch out hands until partners are connected. Once members are holding hands they can then use their collective strength and pull against each other so that they can stand up. Once they have mastered that skill they are told to connect with the other 4 members of their small group and repeat the process with one rule. Everyone must be connected and stand up at the same time. The goal is for the whole class to stand up at the same time. With a possible 5 groups for a total of 30 students it takes a great deal of teamwork to arrange the group such that they are all connected and can stand up using each other as counterweights. Again, this activity promotes numerous variations that can produce a successful attempt by the group. The leader’s goal is to cultivate free expression of ideas in an accepting environment.

The final activity of the day is an initiative called the human knot. This an activity in which students are instructed to get into groups of 10 and exchange hands with a different individual with each hand, producing a virtual human knot. Once the knot is tied the student are instructed to untie the knot without letting go of their partner’s hand, and just to add a bit of competition the first group to get untied receives an extra credit point.

There are only three possible solutions to this activity: one circle, two circles, or a figure 8. The group that successfully unties themselves first usually celebrates with
shouts of joy and a high five or two. Challenging the students to discover if they can get the entire class into and out of a knot creates the final variation of the day. This challenge causes the students to problem solve and strategize ways in which they can tie a knot that is easily untied. The day's activities have all been designed to get the group ready to work together and to begin to develop relationships. Class closes with a quick wrap-up session in which students are given feedback based on their performance during the session and a reminder to be prepared to participate in outdoor activities in the next class session.

Session 3 begins in the same fashion as the previous session. Once the class is circled up outside, an icebreaker to begin class and reacquaint one another starts with another introduction in which students state their name, the type of vehicle they drive, and their goal for the course. This is done first, to further the getting-to-know-you process with name recognition, and furthermore, with the class participating in off-campus field trips, the students need to be able to recognize each other's vehicles. Additionally, it is the students' formulation of a goal and then stating it aloud that not only helps the leader to be more aware of the students' needs but also helps the rest of the group to recognize that many of them already share the same goals.

While the students remaining in the circle, an extremely challenging initiative is introduced. The game is called “going on a picnic.” Participants are told that they are going on a picnic and are instructed to say their name and something that they are bringing on the picnic that begins with the same letter as their first name. Sounds easy, but the trick is that, starting from the leader, the students sound off one at a time going counterclockwise. The difficult part of the activity is that, one by one, they must start
with the leader and state everyone's name and what they are bringing between them until finally the person standing to the left of the leader must name everyone in the group. This is not too bad if you are hard in a small group but is extremely difficult when the group consists of 30 people.

The activity places students in an uncomfortable position because they must have a good short-term memory, especially if they are toward the end of the circle. Anxiety is relieved when the students realize that there is no penalty for not remembering, and most begin to laugh, along with other members, as they begin to make mistakes. Most importantly, everyone knows everyone's name by the end of the activity, which prepares the students to work in a cooperative environment. The activity closes with one final challenge. Students are told to reorder themselves in the circle and see if anyone is able to name the entire group. There are usually a couple of students who are willing and eager to try, and once they have done it the activity closes with an introduction to the next set of activities in which they will be engaged.

The next set of activities consists of initiatives that force the group to deal with issues of trust. One of the first steps to building a relationship is to trust the individual with whom the relationship is being developed. Before the group begins this portion of the activities, they are advised that all of the initiatives are "challenge by choice." This means that if any individuals feel uncomfortable attempting a challenge, they can choose not to participate without receiving any negative consequences. After this explanation, the group is taught the "spotters kata." The first and most important point that is explained is that of safety and the importance of risk management. The students are told that they must be on constant vigil to protect their fellow classmates. The
procedure is rather simple. Students are told to put their hands, palms up, out in front of them with their arms flexed and their legs shoulder-width apart, knees slightly bent and offset, ready to catch someone, and if need be they can support them with the offset leg all the way to the ground. The command, once the position has been demonstrated, is “ready position, bumpers up.”

The spotters kata: “Spotters ready?” “Ready!” “Falling?” “Fall on!” must ring out in order to maintain a level of safety that can be managed by the leader. All of the day's activities place the students in situations where the success of the event requires them to rely on their partner. At times, there is the perception that the student's very life is in the hands of a virtual stranger. Activities begin with pairing the students up by approximate size.

The first activity is called the "standing trust fall." This activity requires the students to use the spotting techniques they have just learned. The activity begins with a demonstration from the leader and a volunteer. The student is directed to take one step away from the leader and cross his/her arms. With the student's back to the leader and once he/she has gone through the kata, the student falls into the waiting and ready hands of the leader. The leader then stands the student back to the upright position and instructs the rest of the students to participate in the activity.

This leads into the next activity, called "willows in the wind." The activity requires students to break up into groups of 8 to 10 and stand in a tight circle. One member of the group is told to stand in the middle with their feet together as if they were nailed to the ground and to cross his/her arms. Remaining members are told to assume the ready position and are instructed to catch the student in the middle as they perform the
simple trust fall they have just learned and are told that this time they are to pass the faller around the circle as if the person was being blown about in the wind like willow branches. The process is repeated until all students who wish to participate have had a chance.

Building from the previous initiative leads to the next activity, called "body surfing." Body surfing is an activity in which one student is to lie on the ground while other students pick them up and take them for a ride. This is accomplished by instructing the students to remain in groups and choose one member to lie on the ground. The remaining students are told to surround the person on the ground at which point they are instructed to place their hands under the student so that they can lift him/her into the air. Once they have achieved the lift, the students are told to carry the person to a designated area and place him/her on the ground feet first. The initiative requires students to act as a team to coordinate the efforts of lifting, carrying, and placing the participating student. Again, all the students are given the chance to participate. This activity sometimes requires a bit of prompting by the leader to encourage larger members of the group to participate; however, once they do, the group receives a noticeable boost of confidence that leads into the final and most challenging event of the day.

Leading the students to a nearby balance beam, sloping from 2 feet to 4 feet, the leader explains that the next activity is a trust fall from the top of the beam. This activity requires one student to volunteer to walk up the beam, with spotters on both sides, turn around, cross his/her arms, and fall straight off the beam into the arms of the spotters on the ground. The spotters are in parallel lines of five or six with their arms
outstretched and interwoven so that the weight of the falling student will be evenly distributed from head to toe. Once the initiative has been explained the students are reminded to use the "spotter's kata" to ensure the readiness of the group before the fall. This activity enables the group to realize that with the help of other members they can support the weight of the smallest to the largest of students falling from 4 feet, which furthers the development of the group's belief that they can trust and depend on each other. The day ends with a discussion of trust issues that have arisen during the session. For example, some members may have been hesitant to participate at first, but through the vicarious experience of others, their self-efficacy was improved, which enabled them to trust the group and experience the activity. Still others may not have participated at all but offered moral support. Whatever the issues that arise the leader must be careful to point out the positives and negatives of the day, all with the goal of improving group cohesion and learning to overcome new and difficult challenges.

Session 4 begins with an icebreaker called "a sea-going tale," an activity that requires the students to tell a coherent story told and built from one student to the next. In this activity the students are told that they are a group of sailors setting out on a voyage in 1692 to find a new land. The students are told that their task is to state their name, what their job is on the ship, and that when they are finished with their tale they are to say “and” so that the next student can begin. The leader also explains that this task requires their imagination and concentration because the tale must flow and somehow end in tragedy. The leader starts the tale by explaining that he/she is the captain and naming the ship then passing the story on to the next student. Once the tale is finished the leader discusses any points of discontinuity. The leader then explains
that the day’s activities will require them to use their collective cognitive skills to perform the tasks.

The first initiative is called "Lava River." The leader describes a scenario in which the students are standing on a lava river bank and they must get each member of the group to the other side. The students are told that in order to get across the river they are to use magical lava-resistant dots to step on to cross to the other side. The problem is that if at any time one of the dots is not being touched by a student the dot will melt in the river. This requires the students to work cooperatively to maintain contact with the dots as well as move across the expanse. The consequences of losing one of the dots raises the stress level of the students and forces them to work together to complete the task.

The next activity is the "human calculator." This activity is done by placing a numbered dot for each of the students inside a circle created by using a rope. The students are told to spread out around the circle and then number off. Once they have their number they are told that they are to find their number on the dot in the circle. Students are then told that the task is to run into the circle, touch their numbered dot, and exit the circle before the next person, in sequence, can do the same. To add stress to the experience the leader also explains that this will be a timed event and states an arbitrary record time for the group to try to beat. Once the students have completed the task, the leader then asks if there is a way that they can strategize to reduce the time. This helps the students learn to value members’ input and work cooperatively toward the common goal. After the students successfully regroup and acquire a time that they are satisfied with, variations to the activity are added. To increase the difficulty, the
leader now begins using the calculator functions. Using addition, subtraction, multiplication, and division the students are required to run out and find the answers to the mathematical problems. For example, if the leader says "3 x 2," the students numbered 3, 2, and 6 would have to run out and touch their dot. The leader continues to add more difficult problems to challenge the cognitive abilities of the students.

This leads to a more physically active game called "four square soccer." This game is played by dividing the students into four equal groups and having each of the four groups stand on one side of a square with a soccer ball in the middle. The group members are numbered and told that when their number is called they are to run out and try to score a goal. Goals can be scored by kicking the ball across any of the sides of the square except the side from which the kicker has come, and the sides are being guarded by the remaining members. For example, when the leader yells "5," then all four 5s run out to try to score a goal. Student must stay alert, listening for their number so that they will be able to get to the ball quickly and hopefully score a goal. The leader adds variations to the game to increase the difficulty be yelling two or more numbers at a time. The result adds chaos and excitement to the game.

The final activity of the day is called the "Sherpa walk." This activity requires the students to be blindfolded and led by other students through an obstacle course. The leader explains a scenario in which the students are space explorers and have landed on a planet, and upon exiting their ship the atmosphere causes them to go blind. Two students, who volunteered before the activity began, are Sherpa who are there to lead them to an area that will return their sight to them; the only problem is that the Sherpa do not speak their language and if they touch any of the group members they will die.
The Sherpa must then create a language that the explorers can follow so that they can maneuver their way through the obstacle course to safety and receive their sight again. After the group has gone through the course once, the leader then asks for two more volunteers to be Sherpa, and the process begins again. This process is done so that the students can take what they have learned from the previous experience and apply it in a way that will be more effective than the first. To conclude the day, the leader processes with the students the day's events, being careful to bring out any concerns that might have arisen, and closes by asking the question How can these events be applied to your life?

Session 5 begins with an icebreaker/deinhibitizer called "ballet freeze tag." The game is played just like the traditional game of freeze tag except that in order to move the students must use ballet movements. This game causes the students to let down their inhibitions and be silly, which can be difficult for some; however, once the game begins the students quickly revert to their childhood and begin to have fun with the activity.

The next activity for the day is called "poop deck." This game is a variation of Simon Says. The leader places two ropes in parallel lines and has the students stand in the middle. The students are then told that where they are standing is called the poop deck; to their right is the quarter deck and to their left is the main deck. The game is played by using the names of the decks as commands to move to the appropriate deck. For example, if the leader says "main deck" the students must step over the rope to the left, and if "quarter deck," then they move to the right and so on. The game is fast paced and requires the students to pay close attention to the commands because if they step
the wrong way they are out of the game. The object of the game is to be the last one remaining, and thus, will be the participant who followed the commands with the greatest precision.

This leads to a more physically challenging activity called "group jump rope." The leader asks for two volunteers to swing a 50-foot piece of rope to be used as the jump rope for the group. The leader then explains that the first objective of the activity is to get the group from one side to the other of the swinging rope. The students are told to strategize their efforts so that they can get the group to the other side as quickly as possible, realizing that if any part of the rope touches one of the participants the whole group must start over. Upon success, the leader begins to add variations to the game, such as having each student run in and jump rope and run out, each one progressively more difficult. The important part of the activity to note is that, with each variation, the main goal is to get the entire group from one side of the rope to the other, stressing the point that to achieve success, everyone must work together cooperatively.

The "four way tug of war" is the next activity. This game is played using a rope that has four equal sides with which the students will use to play a game of tug of war. The group is split into four teams and is instructed to grab on to one of the four pieces of rope. The boundaries for the winner are discussed, and the game begins. After the first round, the group is told to strategize before the next attempt. Without fail, one or more of the groups decide to join forces with another to pull the others across the boundary. The leader then points out the value of working together to achieve success.

The final activity of the day is called the "electric grid." The students are shown an 8-foot by 8-foot grid, and it is explained to them that they must follow a designated
path in order for them to successfully maneuver through the grid. The problem is that, if one of the students steps on one of the squares in the grid that is not one of the designated squares, it has been charged with a lethal amount of electricity and the student will have to go back and another student will then have the opportunity to try to maneuver through the grid. Students are told that the key to finding their way is to watch their fellow classmates as they attempt to cross so that they can find the safe squares and eventually maneuver across the entire grid. The leader then places the students into two groups and asks for a volunteer from each to be the leader of the group. The 2 group leaders are then given a card that has the map of the safe squares on the grid and are instructed to lead their team’s efforts to discover the way through the grid; however, they can only respond to the group member's movements. They cannot instruct them as to which squares to step on. The teams are placed on opposite sides of the grid and are told that the objective is to get the whole team to the other side before the other team. This activity requires the students to work together to learn the pattern, and each member must follow the same pattern that has been learned by watching both the successful and unsuccessful attempts of those who have gone before them. At the end of this activity the group is gathered to discuss the day's events. The leader asks the students what they have learned from the experience and how they can apply the lessons to their daily lives.

Session 6, the final day of low ropes initiatives is called the "Olympic challenge." The leader sets up six stations for the students to move through in progression. The students are placed into two groups and are told to name their team. The leader then walks the teams through the course and explains each activity's objectives. The first
The next activity is called the "blind man's slalom." The students are shown two identical slalom courses made of cones and are told that when they get to this station they must partner up, blindfold one, and the other will lead them through the course. Once the team successfully maneuvers through the course they move on to the next station, which is called the "mine field." This station is one in which a rectangular boundary is established using cones. Inside the boundary is the minefield. Numerous balls in various sizes and a trip line in the middle represent the mines. The students are told that if they step on any of the balls or the trip line then the bombs explode and anyone in the minefield must start over. The initiative is played by having the partners from the slalom course stand on opposite sides of the minefield. The students are told that the partner who was blindfolded is now be the leader and the leader will be blindfolded. The object of the activity is to have the new leader standing on one side of the minefield and, using only verbal commands, lead the blindfolded partner through the minefield without touching one of the mines. To confound matters there is enough room in the mine field for four sets of students to cross the field at a time, making it increasingly difficult for the blindfolded partner to hear only the commands of their leader.

From here, the students are led to the next station where they will participate in a
typical three-legged race. The race is 50 yards and ends at the final station where two sets of wooden skis are stationed in front of a diamond-shaped obstacle course. The skis are 8-foot long 4 by 4s with six ropes equally spaced along each ski. The students are told that in order to move through the course they must stand on the skis, grab the ropes, and with as many as 6 students on the skis maneuver their way through the course. The only way that this activity can work is if the students all move in complete unison. They must all stand on the skis, grab the ropes, and pick one side to step forward in complete unison in order to move the skis. The activity forces them to learn to work together to reach success.

The leader then brings the group back to the quick change and explains that they have 2 minutes to strategize before the Olympic challenge begins. To add extra incentive, the students are told that the winning team will receive 5 extra credit points to their grade. Once the 2 minutes are over, the leader blows the whistle and the fun begins. Upon completion of the challenge the winners are awarded with their 5 points, and the leader brings the group together, where a final activity is introduced. This activity is called the "great whole." Students are told to get in a circle and get as close as possible. The leader then takes a rope and wraps it around the group and pulls the rope tight so that the students are so close that there is no space remaining, just one large group huddled together as tight as possible. The leader then explains that their objective is to move the “great whole” to a designated spot, pick up a ball, and bring it back to the leader. This activity is performed to emphasize the importance of the group's working together as one unit helping prepare them for the tasks that they will face in the remainder of the course and the preparations for the group's special event weekend.
camping trip. The session ends with processing the day’s events, and the students are told that the next class will meet in the classroom, where a formal processing session will be held.

Session 7 takes place in the classroom, and the day is spent processing the previous six sessions’ activities. Everyone is given the opportunity to tell which activity was their favorite and least favorite activity. This is followed by a discussion of what life lessons could be assigned to the activities, and most importantly, how these lessons could be applied to their life goals and how they could overcome the difficulties that lie before them (see Appendix A).

Session 8 is devoted to lecture on the seven principles of Leave No Trace. These principles include (a) plan ahead and prepare, (b) travel and camp on durable surfaces, (c) dispose of waste properly, (d) leave what you find, (e) minimize use and impact of fire, (f) respect wildlife, and (g) be considerate of others (see Appendix B).

Session 9 is spent discussing the 12-part trip plan that the class will be responsible for creating. The 12 parts are Purpose of the trip, group and individual goal, participant list, equipment list, shopping list, meal plan, location and weather pattern, land management polices, itinerary A and B, route maps, emergency contact information, and risk management. The instructor describes in detail what should be included in each of the parts and explains that students will be given time during class to develop the plan. The instructor also points out that the trip plan must be presented to the instructor’s satisfaction two class periods before implementation of the plan on the special event weekend campout. The class closes with the instructor allowing the students to volunteer for which of the 12 parts of the plan they will be responsible for
creating. There are 30 students in the class, so some groups have 2 students while others have 3 (see appendix C).

Session 10 is a skill-building session concerning the use of backpack cooking stoves. The students meet in a designated area outside where there are six cooking stations prepared. The students are shown how to use each of the stoves and are then told that the objective for the day is to prepare and cook their lunch using the equipment they have just learned to use. Students are divided into six groups and, using the ingredients and instructions placed at each station, cook a portion of the group's lunch. This activity has natural consequences for the students to experience. Success means that the students have lunch to eat, whereas failure means part or all of the lunch is ruined. The normal result of this activity is that parts of the lunch are burned and parts are edible, and the group divides the successful portions of the food so that all members of the group have something to eat, thus stressing the cooperative environment that leads to the experience of success. After they clean the equipment the instructor asks the students what they have learned about the backpack cooking and what they could have done differently to ensure success.

Session 11 is the second cooking experience. This experience takes place off campus and is devoted to Dutch oven cooking. Once the students have arrived at the site, the instructor teaches them the basics of cooking with a Dutch oven. The instructor demonstrates the proper method for coal preparation, how many coals to use to cook with the Dutch oven, and how to clean and re-season after use. After the demonstration the instructor shows the students the ingredients that they will use to make a Mexican casserole. The students then mix the ingredients in one large Dutch oven, place the lid
on top, and assemble the coals. They are told that their lunch will be ready in 45 minutes. While their lunch is cooking the students are taught the basics of archery, and each is given the opportunity to participate in the event. The students are then brought back to the Dutch oven and lunch is served. The day ends with a discussion of the day's events, cleanup, and instruction for the next class.

Session 12 begins in the classroom with a discussion of meal planning and the methods used to repack, transport, and cook the ingredients for meals. Students are then placed into five groups for meal planning. There will be five meals prepared by the students on the trip, and each group will be responsible for planning all aspects of one of the meals. The remainder of the class is spent allowing the students to work in groups either on meal planning or trip planning.

Sessions 13 and 14 are spent teaching the students knot tying and shelter construction. During the first session the students are taught knots that will be used to create shelter, and in the following session the students take what they have learned to construct a centerline tarp shelter and tents. The instructor points out that one of the keys to good shelter construction, as well as in life, is taking pride in their work and using craftsmanship so that their work will stand up to scrutiny.

Session 15 is the 2nd day used for group work. The instructor allows the students to use the computer in the classroom and brings other resource materials that can be used to assist the students while they prepare the trip plan. The day closes with a discussion of the trip plan’s progress and any issues that need debating. Finally, students are reminded that their midterm projects are due at the beginning of the next class meeting.
Sessions 16 through 18 are used for student presentation of their midterm project. The students’ turn in a three- to five-page paper and present a 5- to 10-minute presentation of an outdoor pursuit that they have chosen and the instructor has approved.

Session 19 begins with a lecture on controlling one’s microenvironment. The lecture is basically a discussion of types of heat loss and what measures can be taken to control the loss. The instructor uses a backpack loaded with all the types of clothing that will be needed for the weekend trip. For each part of the lecture the instructor reaches into the pack and shows the students an example of the clothing items being discussed. The second half of the class is spent in group work, and class closes with a wrap-up session concerning any issues about the trip.

Sessions 20 and 21 are spent teaching the students orienteering. During the first session the students are taught the parts of a compass, how to take a heading, and how to use a map and compass to navigate in the outdoors. Students are then taken outside and are given the opportunity to practice taking headings. The following session is spent allowing the students to take what they have learned and apply it on an orienteering course. The instructor sets up 10 stations, each has an orange flag and a unique punch. The students are given a card that has six headings, with each leading to a different flag; however, four flags are used as distracters, so the students must be sure that they stay the course correctly. The students are told that they are to partner up and find each flag that their heading card leads them to. Once they have found the flag that their heading card leads them to they are to take the punch found on the flag and punch their card in the designated space. The course is created such that the last heading returns
the students to the starting position. When the students return to the start, their cards are checked for accuracy, and if there are any incorrect punch marks they are sent back to find the correct punch. The session ends with a discussion of the importance of taking a true heading and methods that the students can use to ensure that they do not stray from the course. Finally, students are asked how they can apply what they have learned to their life situation.

Session 22 is a field trip to a local disc golf course. The students are assembled at the course and taught the basic ways in which to throw the disc and that the game is played just like golf. The students are then split into four groups and are allowed to play as many holes as the time allows. This activity is a new experience for most students, which allows them to learn a new skill and outdoor pursuit that is free to play, with relatively inexpensive equipment.

Session 23 is the last group workday. This period is spent fielding any questions or concerns that the students may have and finalizing the elements of the trip plan.

Session 24 is the group presentation of the trip plan. The 12 small groups present their portion of the plan. This presentation is a highly stressful situation for the students because the instructor's approval of the plan depends upon how well each of the 12 elements have been completed, and ultimately whether or not they are allowed to implement the plan. Although no group in the study has failed the presentation, a few changes must always be made before the trip. This unique problem-solving experience brings about the experience of success that helps prepare the students for the difficult challenges that the weekend trip will provide.

Session 25 is the group shopping experience. Students are required to meet at a
local grocery store and to use the shopping list portion of the trip plan to retrieve all the
supplies that they will need for their trip. This problem-solving situation requires the
students to divide themselves and the shopping list into groups and purchase the
supplies with a $600 budget. Once all the supplies have been secured, those students
who are available follow the instructor to his home and repackage and prepare the
supplies for the ensuing trip.

Sessions 26 through 28 are spent implementing the trip plan on the weekend
special event campout, the culminating experience for the course. The trip begins on a
Friday afternoon with the students and the instructor meeting at a designated time and
location for departure and ends on a Sunday afternoon. Upon arrival at the camp
location, the students must transport all the gear to the campsite and set up camp. This
includes building a central shelter using a tarp and centerline for the kitchen and
headquarters, establishing designated areas for all the group gear, and finally setting up
their tents and storing personal gear. Once challenges of set-up are completed, the
students refer to the itinerary to determine their next course of action. Typically, the
evening meal group must begin prepping and cooking, while other group members
participate in some sort of activity.

One of the most difficult challenges of the trip is the preparation of meals. This is
because of the novel way in which they cook the meal and is confounded by the fact
that not all the students are present on the trip, leaving the meal groups short some of
their members; in some cases none of the members of the group were in attendance
requiring the students to problem solve the situation in order for the meal to be
prepared. After dinner and clean-up, the students participate in the scheduled evening
activities. The evening closes with a fireside chat concerning the day’s events and strategizing the following day’s activities.

Saturday morning begins with the meal group responsible for breakfast prepping and cooking for the group. After breakfast the group refers to the itinerary and makes the necessary preparations to participate in the scheduled activities. The activities that the students have chosen for this study vary from semester to semester. The important point to note is that the group as a whole chooses them. The lunch group either prepares the lunch on the trail or back at camp, and the students continue with the scheduled afternoon activities. After returning to camp and experiencing some free time, the evening meal group prepares dinner. Once clean-up has been completed, the students participate in the evening activities and the day closes with a fireside chat.

Sunday morning is staff breakfast. The instructor and staff members prepare the morning meal. After breakfast, the group breaks down camp and repacks all the gear. After all the gear has been transported to the vehicles the students then participate in the weekend’s last activity. The experience ends when the group returns to campus, unpacks the gear, and has a final processing session that ends with a cheer. Students then return to their homes.

Session 29 is held in the classroom and is used for processing and evaluating the experience. The students are given a nine-question evaluation/processing form and are given 30 minutes to answer the questions (see Appendix D). The last half of class is spent allowing the students to discuss their answers and process the experience verbally. The session ends with the instructor handing out a take-home comprehensive final exam that is used to evaluate the students’ learning and to bring about
transference and generalization of the semester-long modified adventure therapy
program (see Appendix E).

Session 30 is the final class meeting for the semester. Students return their final
exams, take the self-efficacy posttest, and enjoy a slide show created from the
campout. The instructor closes the semester with final remarks concerning the success
that the students have achieved throughout the course, saying that it is his hope that
they will not only take away from the course the skills they have learned, but also the
confidence to overcome the many difficulties they will face in the remainder of their
coursework and, most importantly, in their lives.

Research Design

The Southwest University Physical Education Teaching Fellow program offers
graduate students unique opportunities to develop assigned courses using past
experience as well as newly acquired information from current coursework. I was given
the opportunity to teach and develop the Outdoor Pursuits using adventure therapy
techniques learned while completing graduate degrees. One of the objectives of the
course was to improve students' perceived self-efficacy. In order to determine whether
this objective was met, I used the GSE to base assumptions about the change in
students' levels of perceived self-efficacy while completing the course. The students
from Outdoor Pursuits were given the GSE scale the 1st week of classes to determine a
baseline score for perceived self-efficacy. Students then received course instruction
using modified adventure therapy techniques and upon completion retook the GSE
survey in order to determine whether the objective was met.
Upon studying the literature concerning the development of self-efficacy and the positive effects reported on the self-efficacy of participants who were involved in adventure therapy programming, I became aware that the technique used in the semester-long Outdoor Pursuits course could be supported by the literature. I believe that quantitative research design can be used to discover whether there is a statistical difference in student self-efficacy from pre- to posttest. Data were analyzed to make correlations and comparisons within the group.

Instructor Background/Qualifications

I am a certified therapeutic recreation specialist (CTRS) and holds a bachelor's and master's degree in therapeutic recreation. Additionally, I worked 9 years in the field using adventure therapy techniques and have researched the literature on adventure therapy since 1996. I have over 20 years of outdoor experience both as a participant and a leader.
Instrumentation

The General Self-Efficacy Scale (GSE) was used to determine students’ level of perceived self-efficacy at pre- and posttesting. The test assesses a general sense of perceived self-efficacy, with the purpose of predicting participants’ abilities to cope with the daily stressors of life as well as overcoming setbacks. The GSE has been tested both with adolescent and adult populations in 23 nations and reports strong reliability statistics, with Cronbach’s alpha ranging from .76 to .90. Criterion, as well as convergent and discriminate-related validity, is also reported, with positive outcomes correlating with positive emotions such as optimism and positive self-image and correlated negatively with anxiety and depression (Jerusalem & Schwartzter, 1993).

I added five demographic questions to the beginning of the test in order to make determinations about student differences based on age, sex, ethnicity, student classification, and years of outdoor experience. There are 10 items, all relating to coping with life struggles, on the questionnaire, and the administration time is no more than 10 minutes. I changed the title on the second page of the questionnaire to General Confidence. This was done to avoid confusion by the students concerning the definition of self-efficacy. Also changed was the response scale that the students use to score each question. The original test scale used a 1-4 level of confidence for each response. Bandura (2001a) suggested that using scales with only a few responses should be avoided because they are less reliable and sensitive to actual change. Based on Bandura’s suggestions, the scale was changed to a 0-100% confidence scale, which allows students to make a more reliable choice and be sensitive to change from baseline to completion (See Appendix F for the test instrument).
Population

The population for this study consisted of students enrolled in Outdoor Pursuits. The expected n for Outdoor Pursuits was 30 students per semester, and I collected data for 3 consecutive semesters. Due to either incomplete data or students dropping the course, the total n for the population studied was 56. The population consisted of 30 males and 26 females, including 1 freshman, 3 sophomores, 12 juniors, 36 seniors, and 4 others. The ethnic make-up of the participants in the study were 1 Hispanic, 5 African American, 1 other, and 49 Caucasian.

Data Collection

Data were collected at two intervals, once the 1st week of classes and again during the last week of classes for 3 consecutive semesters. The instrument was handed out at the beginning of the class period and required approximately 10 minutes to complete. I read the instructions to the students and advised them to answer as truthfully as possible. Additionally, I explained to the students that completion of the survey was voluntary and would in no way affect their grades. Upon completion, all students handed their survey back to me who then maintained possession of the data. A one-way ANOVA was proved there was no statistical difference between the 3 semesters of data; therefore, I could collapse the 3 semesters of data into one data set for analysis.

Data Analysis
In order to determine whether there was a difference between pre- and posttest scores in the test subjects, repeated measures analysis of variance (ANOVA) was used. This statistical technique was used to determine whether pretest-posttest scores for the group are reliably different. The statistic examined the interaction between the treatment and the dependent variable over time (Gall, Borg, & Gall, 1996). The assumptions for repeated measures ANOVA are that the sample was randomly selected, the dependent variable is normally distributed in the population, there is equal variance for the population test occasions, and the correlation coefficients between pairs of test occasions are equal (Hinkle, Wiersma, & Jurs, 1998). Using the data gained from analysis I made inferences concerning the significance of the study.
CHAPTER 4
RESULTS

This chapter presents the results from the statistical analysis of the data used for hypothesis testing in this study. Each of the five hypotheses is presented in the order in which they appear in chapter 1, followed by a reporting of the data.

I used the alpha .05 level of statistical significance as a criterion for either accepting or rejecting each hypothesis. Statistical calculations were performed using repeated measures ANOVA to test each of the hypotheses for significance; however, the assumption for randomization of the population studied was not met, and therefore generalizability is limited to students enrolled at Southwest University.

Cronbach's alpha was calculated to determine whether the test instrument scores were reliable for the population. The pretest reported an extremely high alpha of .94, and the posttest was .93, indicating that the test is a reliable measure for the population. Also calculated was the effect size ($\eta^2$) for each of the hypotheses. Effect size is used to determine the amount of practical effect that the treatment has on a population. Typically, an effect size of .2 is considered small, .5 is considered moderate, and .8 is considered large. Neill (2003) discussed the need for benchmarking the effect size of adventure therapy programs. It is through this process that the field of adventure therapy can synthesize the findings of other researchers and derive an effect size benchmark. Through meta-analysis he suggested that an effect size of approximately .4 is the benchmark for adventure therapy programming.

There were a total of 86 participants in the study; however, due to either incomplete data or no posttest information the total n for the study was 56. There were
30 males and 26 females. Concerning classification, there were 1 freshman, 3 sophomores, 12 juniors, 36 seniors, and 4 others. The ethnic make-up of the participants in the study were 1 Hispanic, 5 African American, 1 other, and 49 Caucasian. Finally, 14 of the participants received only the classroom treatment, while 42 received both the treatment as well as the weekend camping trip.

Hypothesis 1

There is no significant difference in perceived self-efficacy among students enrolled in Outdoor Pursuits from baseline to completion of the course.

In order to test this hypothesis students enrolled in PHED 1580 Outdoor Pursuits were given the General Self-efficacy Scale with modifications to establish a baseline score for students’ perceived self-efficacy to be used for comparison after posttesting.

Table 2

Statistical Data for Hypothesis 1

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
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<tbody>
<tr>
<td>Individuals</td>
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<td>55</td>
<td>24858.15</td>
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<td>.423</td>
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<tr>
<td>Occasions</td>
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<td>285628.00</td>
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</table>

Table 2 presents the pretest and posttest means as well as the standard deviations for the group on the GSE. The data show the mean scores for the group on the GSE increased from pretest to posttest. An increase in the groups’ score on the
GSE indicates an increase in perceived self-efficacy. The mean for the population pretest score was 737.63, which after posttest increased to 838.63.

Additionally, Table 2 presents the repeated measures analysis of variance data in order to show the level of significance between the pretest and posttest of the population over time. The effect size was calculated in order to determine the practical effect of the treatment which addresses the question of statistical difference between the group on the GSE across time. The prepost main effect was significantly different at the .05 level; $F=40.26$, $p=.001$. These results indicate that there was a statistically significant increase in participants' perceived self-efficacy from pre- to posttesting. As a result of the data analysis, hypothesis 1 was rejected. Furthermore, the treatment effect size was calculated to determine the practical significance and was found to have an effect size of ($\eta^2 = .432$), indicating that the treatment had a moderate effect on the group and achieved the .4 benchmark for therapeutic significance.

Hypothesis 2

There is no significant difference in the change in self-efficacy between males and females enrolled in Outdoor Pursuits from baseline to completion of the course.

Table 3 presents the pretest and posttest means as well as the standard deviations for gender on the GSE. The data show the mean scores for gender on the GSE increased from pretest to posttest. An increase in the groups' score on the GSE indicates an increase in perceived self-efficacy. The mean for males' pretest scores was 769.90, which after posttest increased to 865.77. The mean scores for females were 700.38 for pretest and 807.31 for posttest.
Table 3 presents the repeated measures analysis of variance data in order to show the level of significance between the pretest and posttest of males and females over time. Also, the effect size was calculated in order to determine the practical effect of the treatment. Table 3 addresses the question of statistical difference between the male and female groups on the GSE across time. The prepost main effect was not significantly different at the .05 level; $F = .118$, $p = .732$. These results indicate that there was no statistically significantly difference in the increase in perceived self-efficacy from pre- to posttesting on males or females. As a result of the data analysis, hypothesis 2 was accepted. The treatment effect size between the groups was found to be $\eta^2 = .002$, indicating that there is little to no difference in the effect of the treatment on the groups.
Hypothesis 3

There is no significant difference in perceived self-efficacy between classifications of students enrolled in Outdoor Pursuits from baseline to completion of the course.

Table 4

Statistical Data for Hypothesis 3

<table>
<thead>
<tr>
<th>Source of variation</th>
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<th>$F$</th>
<th>$p$</th>
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<tr>
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</tbody>
</table>

*Computed using alpha=.05.

Table 4 presents the pretest and posttest means as well as the standard deviations by classification on the GSE. Due to the small numbers of students in the underclassmen classification, the data were examined by placing participants into two groups, juniors and lower and seniors and higher. The data show the mean scores for the classification groups on the GSE increased from pretest to posttest. An increase in the group's score on the GSE indicates an increase in perceived self-efficacy. The mean for juniors and lower pretest score was 742.81, which after posttest increased to 835.94. The mean for seniors or higher pretest scores was 735.55, which increased to 839.70 after posttest.
Additionally Table 4 presents the repeated measures analysis of variance data in order to show the level of significance between the pretest and posttest of the population over time. Also, the effect size was calculated in order to determine whether there was a difference in the effect of the treatment on classification of students. Table 4 addresses the question of statistical difference between the classification groups on the GSE across time. The prepost main effect was not significantly different at the .05 level. \( F = .096, p = .758 \). These results indicate that there was no statistically significant difference in the increase of perceived self-efficacy from pre- to posttesting on classification of students. As a result of the data analysis, hypothesis 3 was accepted. Accordingly, the effect size of .002 indicates that there was very little difference in the effect of the treatment on classification of students.

Hypothesis 4

There is no significant difference between reported level of perceived self-efficacy and ethnicity of students enrolled in Outdoor Pursuits from baseline to completion of the course.

Due to the fact that the total population, \( N = 56 \), was 87.5% Caucasian \( (n=49) \), 1.8% Hispanic \( (n=1) \), 8.9% African American \( (n=5) \), and 1.8% other \( (n=1) \), the assumptions for comparing groups statistically could not be met. Therefore, the question could not be answered.

Hypothesis 5

There is no significant difference in pretest and posttest scores of perceived self-efficacy between students who participated in the weekend campout and those who did not participate.
Table 5

Statistical Data for Hypothesis 5

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<tr>
<th>Source of variation</th>
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<th>F</th>
<th>*p</th>
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<td>3024.00</td>
<td>.422</td>
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<td>.008</td>
</tr>
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</tbody>
</table>

*Computed using alpha=.05

Table 5 presents the pretest and posttest means as well as the standard deviations between students who participated on the trip and those who did not participate on the GSE. The data show the mean scores on the GSE increased from pretest to posttest for those who participated on the trip as well as those who did not. An increase in the group's score on the GSE indicates an increase in perceived self-efficacy. The mean for the trip group pretest score was 734.36, which after posttest increased to 829.36. The mean for the non-trip group pretest scores were 747.43, which increased to 866.43 after posttesting.

Additionally, Table 5 presents the repeated measures analysis of variance data in order to determine whether there is significant difference between the pretest and posttest scores for students who participated and those who did not. Also, the effect size was calculated in order to discover whether there is a difference in effect of the treatment on the two groups. Table 5 addresses the question of statistical difference between those who participated in both the semester-long treatment and the weekend
trip and those who received the classroom treatment on the GSE across time. The prepost main effect was not significantly different at the .05 level. \( F = 422, p = .519 \). These results indicate that there was no statistically significant difference in the increase in perceived self-efficacy from pre- to posttesting between students that participated in the trip and those who did not. As a result of the data analysis, hypothesis 5 was accepted. Additionally, the effect size of treatment between the groups was found to be \( \eta^2 = .008 \), indicating that there was little difference in the effect of the treatment on the groups.
CHAPTER 5
CONCLUSIONS

This study examined the effect of the modified adventure therapy (MAT) program on students' perceived self-efficacy. I exposed students enrolled in PHED Outdoor Pursuits to a semester-long treatment using the MAT program in order to fulfill the requirements of the course as well as improve the perceived self-efficacy of the student. Each student involved in the study took the GSE during the 1st week of classes and again the last week of classes to establish pre- and posttest scores with which to compare the differences in the populations' mean scores after receiving the treatment.

The treatment each student received included six 1-hour low ropes initiatives and 21 sessions in which the students were involved with skill building, problem-solving, group work and presentations. Finally, students had the opportunity to participate in a 3-day special event campout. One of the most important components of the MAT program is processing the experience with the students at the end of each session. I believe and the literature supports the use of the processing sessions to enable the students to apply what they have learned to their own lives, helping them to cope with future novel and difficult situations. This chapter presents the findings of the study.

Hypothesis 1

There is no significant difference in perceived self-efficacy among students enrolled in Outdoor Pursuits from baseline to completion of the course.

The first and most critical issue is whether or not the modified adventure therapy program produces a positive change in college students' perceived self-efficacy. The analysis showed that there was a significant positive change in the students' level of
perceived self-efficacy from baseline pretesting to posttesting at the end of the course. With the p value of less than .05 I can with 95% confidence say that the modified adventure therapy program had a positive effect on the participants' perceived self-efficacy. The effect size was also reported as being $\eta^2 = .423$, representing a moderate effect that meets the suggested benchmark for adventure therapy programming. These findings suggest that the modified adventure therapy improved the participant's perceived self-efficacy, thus producing a student more prepared to overcome the challenges that lie before him/her in the future.

Hypothesis 2

There is no significant difference in the change in perceived self-efficacy among students enrolled in Outdoor Pursuits from baseline to completion of the course.

The data showed that there was no significant difference at the p< .05 level between males' and females' increase in perceived self-efficacy after receiving the treatment. The effect size of .002 also indicated that there was little to no difference in the effect of the treatment on males or females. This suggests that the modified adventure therapy program has relatively the same effect on males as it does females. Therefore, the program is equally as effective for males and females.

Hypothesis 3

There is no significant difference in perceived self-efficacy between classifications of students enrolled in Outdoor Pursuits from baseline to completion of the course.

The data for this question were collapsed into two groups because of the numbers of students in each classification. The break in the data came between juniors and lower, representing freshman, sophomores, and juniors, with n=16; and seniors and higher,
representing, seniors and those classified as other, with n=40. Therefore, the data were collected using the two groups for comparison. One explanation for the larger number of seniors and higher classification in the study is that the course typically fills to capacity on the 1st day of enrollment and seniors have an earlier date on which they can register for classes. The data showed that there was no statistically significant difference at the p<.05 level between the effect of the treatment on the classification of students. The effect size of .002 also suggests that there is no difference in the effect of the treatment on classification of students participating in the experience. Thus, the data imply that the modified adventure therapy program has an equal effect on students, no matter their classification.

Hypothesis 4

There is no significant difference between reported level of perceived self-efficacy and ethnicity of students enrolled in Outdoor Pursuits from baseline to completion of the course.

This hypothesis could not be tested statistically because of the number of students in each category. The data for the population’s self-reported ethnicity were 87.5% Caucasian (n=49), 1.8% Hispanic (n=1), 8.9% African American (n=5), and 1.8% other (n=1), leaving the only possible collapsing of groups to be Caucasian (n=49) and all other minorities (n=7). With the overrepresentation of Caucasians in the population the comparison group was not large enough to test significance. Thus, I could not compare the two groups accurately.
Hypothesis 5

There is no significant difference in pretest and posttest scores of perceived self-efficacy between students who participated in the weekend campout and those who did not participate.

The data for this hypothesis showed that there was no significant difference between students who participated in the weekend camping trip and those who did not. Both groups received the classroom sessions throughout the semester, whereas only one group received both the sessions and the culminating experience of the weekend camping trip. Intuitively it would seem that there would be a difference between the two groups changes in self-efficacy and that the group experiencing the camping trip would have the greatest amount of change. Intuition is not always sound, because the data showed that there was no statistical difference at the p<. 05 and that the difference in effect between the groups was a very small .008. In other words, students participating in the classroom treatment alone were equally as affected by the treatment as those participating in both the classroom treatment and the weekend camping trip.

This implies that the significant change in the participant’s level of perceived self-efficacy is due to the classroom sessions alone. However, I believe that the trip plays an integral part in student development of perceived self-efficacy because the trip serves as a goal for the group to plan, implement, and experience. Without the trip, the dynamics of the modified adventure therapy program would be changed and possibly not as effective. Those not participating in the campout experience all the preparations as well as the vicarious experience of group members who participated. As Bandura(1977) explained, the vicarious experience, although weaker, provides the
individuals the opportunity to improve their level of self-efficacy. Additionally, the application of Nadler's (1993) seventh point concerning processing the experience with the entire group upon return to campus provides those students not participating in the trip the opportunity to glean information with which they can evaluate their self-efficacy. Thereby, the students may have been equally affected by the treatment.

In summary, the study supports the literature concerning the development of self-efficacy. Researchers describe self-efficacy in terms of the belief or confidence in one's abilities, finding that it is affected most by mastery experiences (Bandura, 1977, 1997, 2001a, 2001b; Bandura et al., 1996; Benight & Bandura, 2004; Paxton & McAvoy, 2000; Sander & Sanders, 2003; Shunk & Pajares, 2002; Schwarzer & Scholz, 2000). Bandura's (1977) landmark work described four sources for which an individual assesses his/her particular level of self-efficacy and suggested that if participants are provided with positive experiences in the four areas the result would be the improvement of self-efficacy. The scale used in this study was concerned with the general sense of perceived self-efficacy, which raises the issue of the need for domain-specific testing of self-efficacy. In the general sense, the students showed improvement in coping with adversity; however, the question remains whether the same findings would occur with a domain-specific assessment.

Using the eight elements of AT by Nadler (1993), with the sixth being producing the feeling of accomplishment, which is basically a mastery experience, and the added benefit of processing the experience, the process contains the necessary ingredients to improve participant self-efficacy. Although the AT process was used in an adventure programming situation where therapeutic conditions were not preexisting, the results
were consistent with the review of literature on AT (Anderson et al., 1997; Austin, 1997; Berman & Davis-Berman, 1995; Dunning, 1994; Gass, 1993; Gillis, 1995; McNutt, 1994; Pommier & Witt, 1995; Simpson & Gillis, 1998; Long, 2001; Bennett, Cardone, & Jarczyk, 1998; Mossman, 1998). The data showed that there was a statistical difference in the populations' reported perceived self-efficacy from pretest to posttest and that there was no difference in the amount of change among gender, classification, and trip participation.

Therefore, the modified adventure therapy (MAT) program was successful in producing the desired effect of improving college students' level of perceived self-efficacy and produce a universal positive effect on students enrolled in the course. This effect is a result of using the eight elements of AT by Nadler (1993), which has been shown to contain all four sources that Bandura (1977) explained are necessary for an individual to assess his/her level of self-efficacy. With the opportunity for individuals to assess their level of self-efficacy in all four domains the natural result would be the improvement of self-efficacy.

Recommendations for the Future

Areas of future studies should include the following suggestions: Researchers should compare the effects of the MAT program with a control group of students. By doing so, I could compare the group receiving the MAT program treatment with a group of students who would not receive the treatment, thereby allowing for a stronger implication of what the program is capable of producing as well as a true experimental design. Also, there should be time series testing, a technique that tests participants in the study at various points in the treatment. This would allow the determination of what
component of the MAT program has the greatest amount of effect on students’ perceived self-efficacy. I could also randomly select students enrolled in the Outdoor Pursuits program and compare those students to a randomly selected group of students not enrolled in Outdoor Pursuits, thus improving generalizablity. Finally, I could develop an Outdoor Pursuits-specific test for self-efficacy. This would allow me to make inferences about academic achievement and strengthen the findings of the program.

Conclusions

The conclusion of the study is as follows. Based upon the eight elements of AT that Nadler (1993) delineated and the four sources that Bandura (1977) explained are necessary for the improvement of self-efficacy, the investigator developed the MAT program to improve the perceived self-efficacy of students who enroll in Outdoor Pursuits at Southwest University. The MAT program produced a positive effect on the perceived self-efficacy of those students participating in the study. There was no statistical difference in the effect of the program by gender, classification, or participation on the weekend campout. Therefore, the MAT program produces students that are more confident in their abilities to cope with stressful life events as well as setbacks that require concentrated effort to overcome. According to the literature in higher education, producing students who are confident in their ability to change their life situation not only meets the goal of the university, but also ensures the democratic way of life that we hold so dear.
APPENDIX A

GROUP PROCESSING FORM
1. What was the best and worst activity during the low ropes initiatives? Why?

2. What was the most expected and unexpected experience or outcome during the activities?

3. What was a preconceived notion about the experience either proven true or false?

4. What do you think you gained, if anything, from the experience?
APPENDIX B

LEAVE NO TRACE PRINCIPLES
LEAVE NO TRACE PRINCIPLES

The Leave No Trace Principles of outdoor ethics form the framework of Leave No Trace’s message:

1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors

Plan Ahead and Prepare

Adequate trip planning and preparation helps backcountry travelers accomplish trip goals safely and enjoyably, while simultaneously minimizing damage to the land.

Pre-Trip Planning

Poor planning often results in miserable campers and damage to natural and cultural resources. Rangers often tell stories of campers they have encountered who, because of poor planning and unexpected conditions, degrade backcountry resources and put themselves at risk.

Why is Trip Planning Important?

You may want to create additional answers for this list:

- It helps ensure the safety of groups and individuals.
- It prepares you to Leave No Trace and minimizes resource damage.
- It contributes to accomplishing trip goals safely and enjoyably.
- It increases self-confidence and opportunities for learning more about nature.

Seven Elements to Consider When Planning a Trip

1. Identify and record the goals (expectations) of your trip.
2. Identify the skill and ability of trip participants.
3. Select destinations that match your goals, skills, and abilities.
4. Gain knowledge of the area you plan to visit from land managers, maps, and literature.
5. Choose equipment and clothing for comfort, safety, and Leave No Trace qualities.

6. Plan trip activities to match your goals, skills, and abilities.

7. Evaluate your trip upon return note changes you will make next time.

Other Elements to Consider:

- Weather
- Terrain
- Regulations/restrictions
- Private land boundaries
- Average hiking speed of group
- Anticipated food consumption (leftovers create waste which leaves a trace!)
- Group size (does it meet regulations, trip purpose and Leave No Trace criteria?)
- All Leave No Trace principles

Meal Planning

Meals are another element to trip planning that can have a profound effect on the impact a group has on a backcountry area.

Benefits of Good Meal Planning:

- Reduced trash.
- Reduced pack weight, resulting in faster hiking times and less fatigue.
- Reduced dependence upon campfires for cooking.

One-Pot Meals and Food Repackaging:

- Planning for one-pot meals and light weight snacks requires a minimum of packing and preparation time, lightens loads and decreases garbage. One-pot meals require minimal cooking utensils and eliminate the need for a campfire. Two backpack stoves can be used to cook all meals for large groups if you have two large pots (one large pot can be balanced on two stoves when quick heating is desired). Remember, a stove Leaves No Trace.

- Most food should be removed from its commercial packing and placed in sealable bags before packing your backpacks. Sealable bags secure food and reduce bulk and garbage. Empty bags can be placed inside each other and packed out for reuse at home. This method can reduce the amount of garbage your group must pack out at the end of the trip and eliminate the undesirable need of stashing or burying unwanted trash.

What are Some Examples of the Results of Poor Trip Planning?
• A group that is inexperienced or unfamiliar with the geography of an area may put people at risk by traveling through areas susceptible to flash floods or along ridge tops vulnerable to lightning activity. Groups traveling arid lands often fail to carry adequate water or a way of purifying water from natural sources. Checking with local land managers and studying maps and weather conditions can contribute to a low-risk existence.

• A poorly prepared group may plan to cook meals over a campfire only to discover upon arrival at their destination that a fire ban is in effect or that firewood is in scarce supply. Such groups often build a fire anyway breaking the law or impacting the land simply because they have not planned for alternatives. Fire bans and scarce wood supplies are signs that an area is experiencing the cumulative effects of heavy recreation use.

• A group that has failed to develop good travel plans may be unable to travel as fast as expected. The terrain may be too steep or the trails too rugged. These groups often resort to setting up camp late at night, sometimes in an unsafe location. Poor campsite selection usually leads to unnecessary resource damage. In addition, the group may never even reach their planned destination.

### Travel and Camp on Durable Surfaces

**Travel on Durable Surfaces:** The goal of backcountry travel is to move through the backcountry while avoiding damage to the land. Understanding how travel causes impacts is necessary to accomplish this goal.

Travel damage occurs when surface vegetation or communities of organisms are trampled beyond recovery. The resulting barren area leads to soil erosion and the development of undesirable trails. Backcountry travel may involve travel over both trails and off-trail areas.

**Travel on Trails:** Concentrate Activities When Traveling in Heavily Used Areas Land management agencies construct trails in backcountry areas to provide identifiable routes that concentrate foot and stock traffic. Constructed trails are themselves an impact on the land; however, they are a necessary response to the fact that people travel in the back country. Concentrating travel on trails reduces the likelihood that multiple routes will develop and scar the landscape. It is better to have one well-designed route than many poorly chosen paths.

Trail use is recommended whenever possible. Encourage travelers to stay within the width of the trail and not short cut trail switchbacks (trail zigzags that climb hill sides). Travelers should provide space for other hikers if taking breaks along the trail. The principles of off-trail travel should be practiced if the decision is made to move off-trail for breaks.
(Hikers in the same group should periodically stop to rest and talk. Avoid shouting to communicate while hiking. Loud noises usually are not welcome in natural areas.)

**Travel Off-trail:** Spread Use and Impact in Pristine Areas (except in some desert areas) All travel that does not utilize a designed trail such as travel to remote areas, searches for bathroom privacy, and explorations near and around campsites is defined as off-trail. Two primary factors increase how off-trail travel affects the land: durability of surfaces and vegetation, and frequency of travel (or group size).

*Durability* refers to the ability of surfaces or vegetation to withstand wear or remain in a stable condition.

*Frequency* of use and large group size increase the likelihood that a large area will be trampled, or that a small area will be trampled multiple times.

**Surface Durability:** The concept of durability is an important one for all backcountry travelers to understand. The following natural surfaces respond differently to backcountry travel.

- Rock, sand and gravel: These surfaces are highly durable and can tolerate repeated trampling and scuffing. (However, lichens that grow on rocks are vulnerable to repeated scuffing).

- Ice and snow: The effect of travel across these surfaces is temporary, making them good choices for travel assuming good safety precautions are followed and the snow layer is of sufficient depth to prevent vegetation damage.

- Vegetation: The resistance of vegetation to trampling varies. Careful decisions must be made when traveling across vegetation. Select areas of durable vegetation, or sparse vegetation that is easily avoided. Dry grasses tend to be resistant to trampling. Wet meadows and other fragile vegetation quickly show the effects of trampling. Trampling ensures new travelers to take the same route and leads to undesirable trail derailment. As a general rule, travelers who must venture off-trail should spread out to avoid creating paths that encourage others to follow. Avoid vegetation whenever possible, especially on steep slopes where the effects of off-trail travel are magnified.

- Cryptobiotic crust ("Crypto"): Cryptobiotic crust, found in desert environments, is extremely vulnerable to foot traffic. Cryptobiotic crust consists of tiny communities of organisms that appear as a blackish and irregular raised crust upon the sand. This crust retains moisture in desert climates and provides a protective layer, preventing erosion. One footstep can destroy "crypto". It is important to use developed trails in these areas. Travel across "crypto" should only be done when absolutely necessary. Walk on rocks or other durable surfaces if you must travel off-trail. In broad areas of "crypto", where damage is unaviodable, it is best to follow in one anthers foot steps so the smallest area of crust is affected, exactly the opposite rule from travel through vegetation. (Cryptobiotic crust is also extremely vulnerable to mountain bicycle travel.)
Desert puddles and mud holes: Water is a preciously scarce resource for all living things in the desert. Don't walk through desert puddles, mud holes, or disturb surface water in any way. Potholes are also home to tiny desert animals.

**Camp on Durable Surfaces:** Selecting an appropriate campsite is perhaps the most important aspect of low-impact back try use. It requires the greatest use of judgment and information and often involves making trade-offs between minimizing ecological and social impacts. A decision about where to camp should be based on information about the level and type of use in the area, the fragility of vegetation and soil, the likelihood of wildlife disturbance, an assessment of previous impacts, and your party’s potential to cause or avoid impact.

**Choosing a Campsite in High-Use Areas:** Avoid camping close to water and trails and select a site which is not visible to others. Even in popular areas the sense of solitude can be enhanced by screening campsites and choosing an out-of-the-way site. Camping away from the water's edge also allows access routes for wildlife. Be sure to obey regulations related to campsite selection. Allow enough time and energy at the end of the day to select an appropriate site. Fatigue, bad weather, and late departure times are not acceptable excuses for choosing poor or fragile camp sites.

Generally, it is best to camp on sites that are so highly impacted that further careful use will cause no noticeable impact. In popular areas, these sites are obvious because they have already lost their vegetation cover. Also, it is often possible to find a site which naturally lacks vegetation, such as exposed bedrock or sandy areas.

On high-impact sites, tents, traffic routes, and kitchen areas should be concentrated on already impacted areas. The objective is to confine impact to places which already show use and avoid enlarging the area of disturbance. When leaving camp, make sure that it is clean, attractive, and appealing to other campers who follow.

**Camping in Undisturbed Remote Areas:** Pristine areas are usually remote, see few visitors, and have no obvious impacts. Visit these special places only if you are committed to, and highly skilled in, Leave No Trace techniques.

**In pristine sites** it is best to spread out tents, avoid repetitive traffic routes, and move camp every night. The objective is to minimize the number of times any part of the site is trampled. In setting up camp, disperse tents and the kitchen on durable sites. Wear soft shoes around camp. Minimize activity around the kitchen and places where packs are stashed. The durable surfaces of large rock slabs make good kitchen sites. Watch where you walk to avoid crushing vegetation and take alternate paths to water. Minimize the number of trips to water by carrying water containers. Check regulations, but camping 200 feet (70 adult steps) from water is a good rule of thumb.

**When breaking camp,** take time to naturalize the site. Covering scuffed areas with native materials (such as pine needles), brushing out footprints, and raking matted grassy areas with a stick will help the site recover and make it less obvious as a campsite. This extra effort will help hide any indication where you camped and make it less likely that other back try travelers will camp in the same spot. The less often a
A pristine campsite, with no evidence of previous use, is appropriate in arid lands provided it is on a non-vegetated, highly resistant surface. Expanses of rock, gravel or sand are all excellent choices. It should never be necessary to camp on cryptobiotic soil, islands of vegetation, or within the precious green ribbons of desert creeks or streams. Beware when camping on sandy river bottoms and areas susceptible to flash floods.

Cooking areas, tents and backpacks should be located on rock, sand, or gravel. Consciously choose durable routes of travel between parts of your camp so that connecting trails do not develop. Vary your routes since the objective is to minimize the amount of trampling and compaction on any specific part of the campsite. Limit your stay to no more than two nights.

Never scrape away or clean sites of organic litter like leaves, and always minimize the removal of rocks and gravel. The organic litter will help to cushion trampling forces, limit the compactability of soils, release plant nutrients, and reduce the erosive forces of rainfall. Disturbing the lichen-coated and varnished rocks known as desert pavement can leave a visible impact for hundreds of years. Once overturned, these rocks are difficult to replace and the lichens and varnish will not grow back within our lifetime.

Camping in River Corridors: River corridors are narrow strips of land and water with little room to disperse human activities. Campsites are often designated. It is generally best to camp on established sites located on beaches, sandbars, or non-vegetated sites below the high-water line.

Dispose of Waste Properly

Minimize Human Impacts

Human Waste: Proper disposal of human waste is important to avoid pollution of water sources, avoid the negative implications of someone else finding it, minimize the possibility of spreading disease, and maximize the rate of decomposition.

In most locations, burying human feces in the correct manner is the most effective method to meet these criteria. Solid human waste must be packed out from some places, such as narrow river canyons. Land management agencies can advise you of specific rules for the area you plan to visit.
Contrary to popular opinion, research indicates that burial of feces actually slows decomposition (at least in the Rocky Mountains). Pathogens have been discovered to survive for a year or more when buried. However, in light of the other problems associated with feces, it is still generally best to bury it. The slow decomposition rate causes the need to choose the correct location, far from water, campsites, and other frequently used places.

**Catholes:** Catholes are the most widely accepted method of waste disposal. Locate catholes at least 200 feet (about 70 adult steps) from water, trails and camp. Select an inconspicuous site where other people will be unlikely to walk or camp. With a small garden trowel, dig a hole 6-8 inches deep and 4-6 inches in diameter. The cathole should be covered and disguised with natural materials when finished. If camping in the area for more than one night, or if camping with a large group, cathole sites should be widely dispersed.

Perhaps the most widely accepted method of backcountry human waste disposal is the cathole. The advantages are:

1. they are easy to dig in most areas.
2. they are easy to disguise after use.
3. they are private.
4. they disperse the waste rather than concentrate it (which enhances decomposition).
5. it is usually easy to select an out of the way location where you can be certain no one is going to casually encounter the cathole.

**Selecting a Cathole Site:**

1. Select a cathole site far from water sources, 200 feet (approximately 70 adult paces) is the recommended range.
2. Select an inconspicuous site untraveled by people. Examples of cathole sites include thick undergrowth, near downed timber, or on gentle hillsides.
3. If camping with a group or if camping in the same place for more than one night, disperse the catholes over a wide area; don’t go to the same place twice.
4. Try to find a site with deep organic soil. This organic material contains organisms which will help decompose the feces. (Organic soil is usually dark and rich in color.) Refer to the jars used to demonstrate decomposition. The desert does not have as much organic soil as a forested area. (See number 2 under Digging a Cathole below.)
5. If possible, locate your cathole where it will receive maximum sunlight. The heat from the sun will aid decomposition.
6. Choose an elevated site where water would not normally during runoff or rain storms. The idea here is to keep the feces out of water. Over time, the decomposing feces will percolate into the soil before reaching water sources.

Digging a Cathole:
1. A small garden trowel is the perfect tool for digging a cathole.
2. Dig the hole 6-8 inches deep (about the length of the trowel blade) and 4-6 inches in diameter. In a hot desert, human waste does not biodegrade easily because there is little organic soil to help break it down. In the desert, the cathole should be only 4-6 inches deep. This will allow the heat and sun to hasten the decay process.
3. When finished, the cathole should be filled with the original dirt and disguised with native materials.

Catholes in Arid Lands: A cathole is the most widely accepted means of waste disposal in arid lands. Locate catholes at least 200 feet (about 70 adult steps) from water, trails, and camp. Avoid areas where water visibly flows, such as sandy washes, even if they are dry at the moment. Select a site that will maximize exposure to the sun in order to aid decomposition. Because the sun s heat will penetrate desert soils several inches, it can eventually kill pathogens if the feces are buried properly. South-facing slopes and ridge tops will have more exposure to sun and heat than other areas.

Latrines: Though catholes are recommended for most situations, there are times when latrines may be more applicable, such as when camping with young children or if staying in one camp for longer than a few nights. Use similar criteria for selecting a latrine location as those used to locate a cathole. Since this higher concentration of feces will decompose very slowly, location is especially important. A good way to speed decomposition and diminish odors is to toss in a handful of soil after each use. Ask your land manager about latrine-building techniques.

Toilet Paper: Use toilet paper sparingly and use only plain, white, non-perfumed brands. Toilet paper must be disposed of properly! It should either be thoroughly buried in a cathole or placed in plastic bags and packed out. Natural toilet paper has been used by many campers for years. When done correctly, this method is as sanitary as regular toilet paper, but without the impact problems. Popular types of natural toilet paper include stones, vegetation and snow. Obviously, some experimentation is necessary to make this practice work for you, but it is worth a try! Burning toilet paper in a cathole is not generally recommended.

Toilet Paper in Arid Lands: Placing toilet paper in plastic bags and packing it out as trash is the best way to Leave No Trace in a desert environment. Toilet paper should not be burned. This practice can result in wild fires.

Tampons: Proper disposal of tampons requires that they be placed in plastic bags and packed out. Do not bury them because they don t decompose readily and animals may dig them up. It will take a very hot, intense fire to burn them completely.
Urine: Urine has little direct effect on vegetation or soil. In some instances urine may draw wildlife which are attracted to the salts. They can defoliate plants and dig up soil. Urinating on rocks, pine needles, and gravel is less likely to attract wildlife. Diluting urine with water from a water bottle can help minimize negative effects.

Special Considerations for River Canyons: River canyons often present unique Leave No Trace problems. The most common practice is to urinate directly in the river and pack out feces in sealed boxes for later disposal. Check with your land manager for details about specific areas.

Leave What You Find

Allow others a sense of discovery by leaving rocks, plants, archaeological artifacts and other objects of interest as you find them.

The activities for this Leave No Trace principle deal with cultural artifacts; however, leave what you find involves many aspects of outdoor use. The following information addresses a variety of ways to respect natural settings.

Minimize Site Alterations: Leave areas as you found them. Do not dig trenches for tents or construct lean-tos, tables, chairs, or other rudimentary improvements. If you clear an area of surface rocks, twigs or pine cones, replace these items before leaving. On high impact sites, it is appropriate to clean up the site and dismantle inappropriate user-built facilities, such as multiple fire rings and constructed seats or tables. Consider the idea that good campsites are found and not made.

In many locations, properly located and legally constructed facilities, such as a single fire ring, should be left. Dismantling them will cause additional impact because they will be rebuilt with new rocks and thus impact a new area. Learn to evaluate all situations you find.

Avoid Damaging Live Trees and Plants: Avoid hammering nails into trees for hanging things, hacking at them with hatchets and saws, or tying tent guy lines to trunks, thus girdling the tree. Carving initials into trees is unacceptable. The cutting of boughs for use as sleeping pads creates minimal benefit and maximum impact. Sleeping pads are available at stores catering to campers.

Picking a few flowers does not seem like it would have any great impact and, if only a few flowers were picked, it wouldn't. But, if every visitor thought "I'll just take a few", a much more significant impact might result. Take a picture or sketch the flower instead of picking it. Experienced campers may enjoy an occasional edible plant, but they are careful not to deplete the surviving vegetation or disturb plants that are rare or are slow to reproduce.

Leave Natural Objects and Cultural Artifacts: Natural objects of beauty or interest such as antlers, petrified wood, or colored rocks add to the mood of the backcountry
and should be left so others can experience a sense of discovery. In National Parks and some other areas it is illegal to remove natural objects.

The same ethic is applicable to cultural artifacts found on public land. Cultural artifacts are protected by the Archaeological Resources Protection Act. It is illegal to remove or disturb archeological sites, historic sites, or artifacts such as pot shards, arrowheads, structures, and even antique bottles found on public lands.

Minimize Campfire Impacts

Fires vs. Stoves

The use of campfires, once a necessity for cooking and warmth, is steeped in history and tradition. Some people would not think of camping without a campfire. Campfire building is also an important skill for every camper. Yet, the natural appearance of many areas has been degraded by the overuse of fires and an increasing demand for firewood. The development of light weight efficient camp stoves has encouraged a shift away from the traditional fire. Stoves have become essential equipment for minimum-impact camping. They are fast, flexible, and eliminate firewood availability as a concern in campsite selection. Stoves operate in almost any weather condition, and they Leave No Trace.

Should you build a fire?

- The most important consideration to be made when deciding to use a fire is the potential damage to the backcountry.
- What is the fire danger for the time of year and the location you have selected? Are there administrative restrictions from the agency that administers the area?
- Is there sufficient wood so its removal will not be noticeable?
- Does the harshness of alpine and desert growing conditions for trees and shrubs mean that the regeneration of wood sources cannot keep pace with the demand for firewood?
- Do group members possess the skill to build a campfire that will Leave No Trace?

Lessening Impacts When Campfires Are Used

Camp in areas where wood is abundant if building a fire. Choose not to have a fire in areas where there is little wood at higher elevations, in heavily used areas, or in desert settings. A true Leave No Trace fire shows no evidence of having been constructed.

Existing Fire Rings: The best place to build a fire is within an existing fire ring in a well-placed campsite. Keep the fire small and burning only for the time you are using it. Allow wood to burn completely to ash. Put out fires with water, not dirt. Dirt may not
completely extinguish the fire. Avoid building fires next to rock outcrops where the black scars will remain for many years.

**Mound Fire:** Construction of a mound fire can be accomplished by using simple tools: a garden trowel, large stuff sack and a ground cloth or plastic garbage bag. To build this type of fire:

Collect some mineral soil, sand, or gravel from an already disturbed source. The root hole of a toppled tree is one such source. Lay a ground cloth on the fire site and then spread the soil into a circular, flat-topped mound at least 3 to 5 inches thick. The thickness of the mound is critical to insulate the ground below from the heat of the fire. The ground cloth or garbage bag is important only in that it makes cleaning up the fire much easier. The circumference of the mound should be larger than the size of the fire to allow for the spreading of coals. The advantage of the mound fire is that it can be built on flat exposed rock or on an organic surface such as litter, duff or grass.

**Fire Pans:** Use of a fire pan is a good alternative for fire building. Metal oil drain pans and some backyard barbecue grills make effective and inexpensive fire pans. The pan should have at least three-inch-high sides. It should be elevated on rocks or lined with mineral soil so the heat does not scorch the ground.

**Firewood And Cleanup:** Standing trees, dead or alive, are home to birds and insects, so leave them intact. Fallen trees also provide bird and animal shelter, increase water holding capacity of the soil, and recycle nutrients back into the environment through decomposition. Stripping branches from standing or fallen trees also detracts from an area’s natural appearance.

- Avoid using hatchets, saws, or breaking branches off standing or downed trees. Dead and down wood burns easily, is easy to collect and leaves less impact.
- Use small pieces of wood no larger than the diameter of an adult wrist that can be broken with your hands.
- Gather wood over a wide area away from camp. Use dry drift wood on rivers and sea shores.
- Burn all wood to white ash, grind small coals to ash between your gloved hands, thoroughly soak with water, and scatter the remains over a large area away from camp. Ashes may have to be packed out in river corridors.
- Replace soil where you found it when cleaning up a mound or pan fire.
- Scatter unused wood to keep the area as natural looking as possible.
- Pack out any campfire litter. Plastic items and foil-lined wrappers should never be burned in a camp fire.

**Safety**

- Provide adequate supervision for young people when using stoves or fires.
Follow all product and safety labels for stoves.

Use approved containers for fuel.

Never leave a fire unattended.

Keep wood and other fuel sources away from fire.

Thoroughly extinguish all fires.

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**Respect Wildlife**

Learn about wildlife through quiet observation. Do not disturb wildlife or plants just for a "better look". Observe wildlife from a distance so they are not scared or forced to flee. Large groups often cause more damage to the environment and can disturb wildlife so keep your group small. If you have a larger group, divide into smaller groups if possible to minimize your impacts.

Quick movements and loud noises are stressful to animals. Travel quietly and do not pursue, feed or force animals to flee. (One exception is in bear country where it is good to make a little noise so as not to startle the bears) In hot or cold weather, disturbance can affect an animal's ability to withstand the rigorous environment. Do not touch, get close to, feed or pick up wild animals. It is stressful to the animal, and it is possible that the animal may harbor rabies or other diseases. Sick or wounded animals can bite, peck or scratch and send you to the hospital. Young animals removed or touched by well-meaning people may cause the animals parents to abandon them. If you find sick animals or animal in trouble, notify a game warden.

Considerate campers observe wildlife from afar, give animals a wide berth, store food securely, and keep garbage and food scraps away from animals. Remember that you are a visitor to their home.

Allow animals free access to water sources by giving them the buffer space they need to feel secure. Ideally, camps should be located 200 feet or more from existing water sources. This will minimize disturbance to wildlife and ensure that animals have access to their precious drinking water. By avoiding water holes at night, you will be less likely to frighten animals because desert dwellers are usually most active after dark. With limited water in arid lands, desert travelers must strive to reduce their impact on the animals struggling for survival.

Washing and human waste disposal must be done carefully so the environment is not polluted, and animals and aquatic life are not injured. Swimming in likes or streams is OK in most instances but in desert areas, leave scarce water holes undisturbed and unpolluted so animals may drink from them.
Be Considerate of Other Visitors

One of the most important components of outdoor ethics is to maintain courtesy toward other visitors. It helps everyone enjoy their outdoor experience. Many people come to the outdoors to listen to nature. Excessive noise, unleashed pets and damaged surroundings take away from everyone’s experience. So, keep the noise level down while traveling and if you bring a radio, tapes or CDs, use headphones so you will not disturb others. Also keep in mind that the feeling of solitude, especially in open areas, is enhanced when group size is small, contacts are infrequent and behavior is unobtrusive. To maximize your feeling of privacy, avoid trips on holidays and busy weekends or take a trip during the off season. Groups leading or riding livestock have the right-of-way on trails. Hikers and bicyclists should move off the trail to the downhill side. Talk quietly to the riders as they pass, since horses are spooked easily. Take rest breaks on durable surfaces well off the designated trail. Keep in mind that visitors to seldom used places require an extra commitment to travel quietly and lightly on the land. When selecting a campsite, choose a site where rocks or trees will screen it from others view. Keep noise down in camp so not to disturb other campers or those passing by on the trail. "Goofing off" or "pranks" are undesirable social behavior and may lead to serious or fatal injuries. Also "events" need to fit the setting - save game playing for the city park. Bright clothing and equipment, such as tents can be seen for long distances are discouraged. Especially in open natural areas, colors such as day-glow yellow are disturbing and contribute to a crowded feeling; choose earth-toned colors (ie. browns and greens) to lesson visual impacts.

Stay in control when mountain biking. Before passing others, politely announce your presence and proceed with caution.

Keep pets under control at all times. Bowser is not in the wildlife category. Dogs running free can be unwelcome, frightening people or leaving behind unwanted "presents". Please pick up dog feces from camps and trails. Some areas prohibit dogs or require them to be on a leash at all times.

Leave gates as you find them, and leave the land undisturbed for others to enjoy. Remember, our open spaces and wildlands are protected for all generations. It is up to us to keep them healthy, beautiful and open to the public for recreation, reflection and revitalization! Enjoy and learn from historical and archeological sites but respect these sites and treasures. Some of these are sacred to Native Americans, or are important cultural reminders of our heritage.
APPENDIX C

ELEMENTS OF THE 12 PART TRIP PLAN
Elements of the 12 Part Trip Plan

1. Purpose
   - The reason for going and the objectives desired to achieve on the trip

2. Group and Individual Goals
   - These are the objectives that the participants plan to achieve as a group (shelter, cooking, work as a team, etc.)
   - Individual goals vary from person to person (learn about the outdoors, make new friends, survive, have fun, etc.)

3. Participant List
   - A list of all the people going on the trip and includes phone numbers, addresses, and which nights, if any, each person will be attending.

4. Equipment List
   - A list of all the equipment needed, individually and as a group, for shelter, cooking, personal hygiene, and items needed for activities

5. Shopping List
   - A list of all the grocery items that are needed to prepare all of the meals for the entire trip

6. Meal Plan
   - Lists the menu for each meal, when it will be served, the equipment needed to prepare it, a recipe for the meal, and the serving size per person

7. Location of the Trip and Weather Patterns
   - Research of campsite location and its record highs, record lows, averages, and the weather forecast

8. Land Management Policies
   - This is a legal document that states all of the park’s rules and regulations, fee information, and other campground details

9. Itinerary
   - This consists of a Plan A and a Plan B of a detailed time frame for arriving, leaving, and activities

10. Route Maps
    - How to get to the site, maps of hiking trails, and routes to safety

11. Emergency Contact Information
• This should include the phone number to the nearest hospital, emergency services, and the names and phone numbers of all participants' emergency contacts

12. Risk Management
• The risks that may be encountered on the trip and how to deal with them
• Location and directions to the hospital
• Health history of trip participants
PHED 1580 - Outdoor Pursuits - Trip Evaluation Part I

Name:__________________________________________

PART I (Complete this part in class. We will then immediately discuss/process):

1. Please describe in what ways you have learned to care for yourself in the outdoors, as a result of the experience and the skills you have gained during this course?

2. What was the best part of the trip for you and why?

3. What was the worst part of the trip and why?

4. What is one preconceived idea that you had about the trip, that you had to confront during the trip, the outcome of which was different than you expected? Explain?

5. If you had to plan this trip over again, what would you do differently and why?

6. In what specific ways has the trip helped you gain an appreciation and respect for the environment?
7. Describe one skill you believe was developed and/or significantly improved as a result of this course?

8. What skills do you believe you need to work on developing in order to continue to engage in various outdoor pursuits on your own?

9. As a result of this course, are you likely to be involved in outdoor pursuits over the course of your life? Yes or No? If yes, please explain how and why you believe you will remain involved in outdoor pursuits over the course of your lifetime? If no, please explain why you will not remain involved over the course of your life.
APPENDIX E

FINAL EXAM
PHED 1580 Outdoor Pursuits
Final Exam

Please type your responses and turn in on December 6, 2005. No Late papers will be accepted. The First 4 Questions are worth 15 point each, leaving question 5 a 40 point answer. Good Luck!

1. List and describe in detail the elements of Leave No Trace.

2. List and critically analyze each 12 parts of the trip plan.

3. Discuss the steps involved in controlling your micro-environment in both hot and cold weather including shelter.

4. List 3 knots learned in the class and discuss their functional use.

5. A). Having now been through the full process of planing, implementing and evaluating the trip what would you consider to be the top 10 most important elements of trip planning? And why?

   B). After creating your top 10 and explaining their importance, Discuss the relationship that those top 10 items can play in your life as you continue to strive to reach your educational and professional goals.
General Self-Efficacy Scale

The University of North Texas is committed to promoting student development during each course that is offered at the university. The ultimate goal is that upon graduation students will be both educated and confident in the skills that they have obtained. The following is a scale that has been developed to determine the level of student confidence in various activities. Your participation in this survey is completely voluntary and will be greatly appreciated. In the space provided above, labeled ID, please put the last four digits of your social security number and the last four digits of your telephone number.

Demographic Questions:

Write the number in the blank that describes you.

_____ 1. Gender: 1) Male 2) Female

_____ 2. Student Classification: 1) Freshman 2) Sophomore 3) Junior 4) Senior 5) Other

_____ 3. Age: 1) 18-22 2) 23-27 3) 28 and above

_____ 4. Level of outdoor camping/recreation experience: 1) none at all 2) very little 3) somewhat experienced 4) quite experienced 5) A great deal of experience

General Confidence:

Please indicate the level of confidence you have that you can perform the following tasks as if they were to be carried out today. Rate your degree of confidence by recording a number from 0 to 100 using the scale given below.

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<th>Confidence Scale</th>
<th>0</th>
<th>10</th>
<th>20</th>
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Confidence (0-100)

1. I can always manage to solve difficult problems if I try hard enough.

2. If someone opposes me, I can find the means and ways to get what I want.

3. It is easy for me to stick to my aims and accomplish my goals.

4. I am confident that I could deal efficiently with unexpected events.

5. Thanks to my resourcefulness, I know how to handle unforeseen situations.

6. I can solve most problems if I invest the necessary effort.

7. I can remain calm when facing difficulties because I can rely on my coping abilities.

8. When I am confronted with a problem, I can usually find several solutions.

9. If I am in trouble, I can usually think of a solution.

10. I can usually handle whatever comes my way.

REFERENCES


