THE INFLUENCE OF A CHALLENGE COURSE EXPERIENCE ON LEARNED RESOURCEFULNESS AND COHESION WITHIN A SUBGROUP OF A STUDENT LEARNING COMMUNITY

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CHAPTER I

INTRODUCTION

The attention given to student retention in institutions of higher education (IHE) is warranted as graduating from college benefits students and IHE. Retention has become a measure of success for the institutions, as retention can be a reflection of larger enrollment and therefore greater funding opportunities for IHE (Pusser & Tinto, 2006). Although students may find completing a college degree challenging, those who graduate find themselves with economic advantages and have greater employment opportunities (Tinto, 1987).

Outdoor recreation programs, or specifically challenge course programs, assist IHE students in their self-confidence to meet the academic and social demands of college (Brown, 1996; Gass, 1987, 1990; Stremba, 1989). University outdoor recreation programs use challenge courses on a regular basis to aid students in gaining self-efficacy, to problem solving skills, develop and to enhance positive self-talk (McKenzie, 2000).

Learned resourcefulness is a set of skills that individuals possess to keep them engaged during stressful tasks (Rosenbaum, 1980). Rosenbaum (1980) has separated Learned Resourcefulness into skills of problem solving, positive self-cognition (self-talk), delay of gratification, and self-efficacy. Challenge course experiences have been

associated with having a positive effect on the development of leaning communities (Akey & Bobilya, 2002).

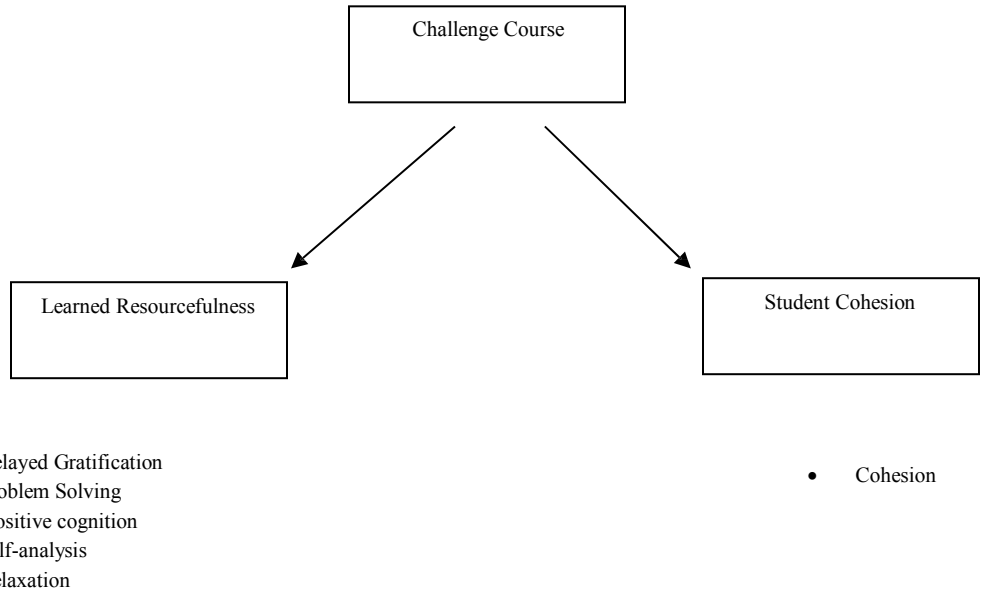
Learning communities are groups of students that incorporate active and collaborative learning activities and promote involvement in complementary academic and social activities that extend beyond the classroom (Kuh & Zhoa, 2004). Both student learning communities and skills of learned resourcefulness have been linked to retention in IHE (Kennett, 1994; Kennett & Keefer, 2006; Kuh & Zhao, 2004; Tinto, 2002). Gaining a better understanding of the characteristics of learning communities and learned resourcefulness such as cohesion, delayed gratification, self-awareness and problem solving is essential for enhancing student retention at IHE.

Background to the Study

The use of challenge course programming to enhance students learned resourcefulness skills and developing cohesion for students living in learning communities at IHE can lead to IHE student success. Learned resourcefulness skills that enhance a student's ability to delay immediate gratification, to make plans under stressful situations, and to feel self-efficacy have been found to aid in a student's ability to pursue and gain a degree (Keefer & Kennett, 2007). Students who become involved in learning communities are able to combine social interactions with information gained in other settings, (such as a classroom), to create a significant learning experience and are motivated to continue at IHE (Kuh, 1996).

Challenge course programming is known for enhancement of the individual development and group building (Glass, 2003; McKenzie, 2000; Miles & Priest, 1999; Rhonke, 1989). Challenge course participants are presented perceived risks through individual and group problematic situations that in turn create moments of dissonance (McKenzie 2000). The challenge course facilitator leads the participant through the process of reflection that presents the opportunity for individual and group change. Common outcomes from a challenge course experience include the development of self-efficacy, planning skills, self-awareness, positive self-talk, persistence, and group development (Glass, 2003; McKenzie, 2000; Miles & Priest, 1999; Rhonke, 1989). Figure 1.1 shows the relationship of a challenge course experience to learned resourcefulness and learning communities.

Figure 1.1 The Relationship of the Challenge Course to Learned Resourcefulness and Student Cohesion



Statement of Problem

In Oklahoma, 45 percent of freshman, fail to graduate from an IHE in six years. Therefore, Oklahoma students continue to drop out in significant numbers (Oklahoma State Regents for Higher Education, 2002). This leads to the conclusion that without changes in retention efforts at IHE in Oklahoma 41 out of 100 students who enter the higher education system will depart from school before earning a degree (Tinto, 1987).

Despite much attention in higher education to retention at a national level, there has been little change through the years in retention rates (Pusser & Tinto, 2007). Tinto (1987) wrote that more students leave their IHE prior to degree completion than stay. Summerskill (1962) suggested the median loss of students in a four year higher education institution was 50%. In 1986 nearly 2.8 million students entered into the higher education system for the first time, over 1.6 million students left their first institution without receiving a degree. In 1993, 2.4 million students entered IHE, of those students 1.1 million left without earning a degree (Tinto, 1993). Current research suggest that less than 60% of first-time students who sought a bachelor's degree at a four-year institution in fall 2002 completed a bachelor's degree at that institution within six years (nces.ed.gov, 2011).

Two factors that have been associated with students' decisions to leave IHE prior to graduation are poor academic performance and the lack of having made a connection between academic expectations and the culture of IHE (Akgun & Ciarrochi, 2003; Keefer & Kennett, 2006; Tinto, 2007). The university environment is designed to stimulate critical thinking by providing students with academic challenges (Keefer & Kennett, 2006). The challenges presented to students in IHE aid in creating a stressful environment

for them. Daily challenges for students such as, pressure of studying, limited time to compete tasks, writing papers, taking tests, making plans for the future and interactions with other people at the IHE are seen to be related to school related stressors. Academic stress has been associated with poor academic performance and the decision to leave IHE (Akgun & Ciarrochi, 2003; Keefer & Kennett, 2006). Learned resourcefulness skills include being able to make under stressful conditions, having the ability to delay immediate gratification, self-awareness, and relaxation (Rosenbaum, 1980). Cohesion has been is an emotional factor that that keeps groups intact and is important to the development of learning communities (Burlingame, Fuhriman & Johnson, 2002).

When faced with academic difficulties there some students who endure because they are able to access learned resourcefulness skills and they are involved in student learning communities (Keefer & Kennett, 2006).

The Purpose of the Study

The purpose of this study was to investigate the effect of challenge course program on the development of learned resourcefulness skills and cohesion on a student learning community. Challenge course programming is known for enhancement of the individual development and group building (Glass, 2003; McKenzie, 2000; Miles & Priest; 1999; Rhonke, 1989). Outcomes identified from challenge course experiences such as self-awareness, delayed gratification, and positive self-talk, can be identified through Rosenbaum's (1980) theory of learned resourcefulness. It has also been suggested that challenge course programming results in the development of cohesion among participants (Akey & Bobilya, 2002; Benshoff & Glass, 2002; and Griffin &

Pennscott, 1991). Identifying the challenge course as a tool to use to develop these skills in IHE will aid college student development.

Research Questions

How does participation in a challenge course program alter personal learned resourcefulness skills perceptions of cohesion? Using a nonrandomized control group pretest – posttest trials between subjects design, participants will be assessed for levels of learned resourcefulness using the Self Control Scale (SCS) and for perceptions of group attachment with the Group Climate Questionnaire – Short (GCQ-S) prior to participation in a one day challenge course program then repeat the measures following completion of the program.

Research Question 1: How does a challenge course experience change learned resourcefulness skills in Oklahoma State University CASNER FIT program's students?

Research Question 2: How does a challenge course experience effect felling of cohesion among students participating in the Oklahoma State University CASNER FIT program?

Significance of the Study

The outcomes yielded from a group challenge course experience have been employed by student development programming under the assumption that challenge course programing can aid in the development of learned resourcefulness and may aid in the development of learning communities which in turn may aid with student success in IHE (Kennett & Keefer, 2006). Connecting the outcomes of challenge course programs with the theory of learned resourcefulness and learning communities provides IHE that are using a challenge course experience an opportunity to enhance student development.

The focus of this challenge course experience may be to specifically determine the impact if any that challenge course experiences have on the development of learned resourcefulness skills as well as the development of a student learning community by increasing cohesion among group members.

Assumptions

1. The Self-Control Schedule (SCS) is an instrument subject to the limitations of self-reporting assessment. Subject's responses may be influenced by extraneous factors such as prior exposure to the scale, dealing with life change stressors and melancholy attention to the survey.
2. Respondents answer the items on the inventories honestly, based on their own true feelings.
3. Each subject volunteered to participate in the study and accepted the contractual terms without coercion.

Limitations

The following limitations have been identified as restrictions to the study narrowing the generalizations made as a result of data collected.

1. Students in the experimental group consist of those who had self-selected to participate in each student learning community.
2. This study is limited by a single institution sample and a short period of time for which the sample is measured and therefore only represents students at Oklahoma State University.

3. Variables not included in this study may be responsible for participant growth noted on the SCS.
4. The Group Climate Questionnaire-Short (GCQ-S) was used to measure changes in cohesion within the CASNER FIT learning community. Treatment in this study created a subgroup within this community therefore the GCQ-S measured the change of cohesion within that subgroup.

Definition of terms

The following list of definitions has been included based on the importance of each term in clarifying concepts and theories presented within this study.

Attrition. Departure from a IHE prior to earning a bachelor's degree (Tinto, 1987).

Challenge by Choice. A term to indicate that each participant on the challenge course is free to determine for themselves the nature of the degree to which they will participate (Miles, Priest, 1999).

Challenge Course. The challenge course is an outdoor recreation program which offers groups and individuals in a group setting the opportunity to participate in a series of activities involving mental, physical, and emotional risk taking. It consists of an aesthetically designed series of ropes, cables and logs combined in a way that simulates challenges that might be found in a natural setting. The experience includes a variety of sessions planned around the various obstacles in order to examine and share common reactions, insights and emotions such as joy, fear, fatigue, compassion, laughter and love (Rohnke, Tait, & Wall, 1997). Challenge course experiences are known to enhance group development, self-efficacy, positive self-talk, problem solving abilities, and decision making under stress (McKenzie, 2000).

Cohesion. "The essence of relationships with in a group" (p. 71) it is the forces that cause members to remain in the group over time (Burlingame, Fuhriman & Johnson, 2002).

Dissonance. Cognitive elements which are psychologically incompatible for the particular individual resulting in a question (Rodgers, 1951).

Experiential Education. Participatory learning through direct experience (Dewey, 1900).

Freshman. A male or female student attending their first year of study at an IHE utilized in this study.

Learned Resourcefulness. A set of skill which a person relies on in stressful environments when their autonomic coping mechanisms are not working for them. These skills are associated with positive cognition (positive self-talk), delayed gratification, planning under stressful conditions, and self-efficacy (Rosenbaum, 1989).

Outdoor Recreation. A component of experiential education that provides practical experiences to expand the capabilities of a student, while encouraging students to consider perceived limitations as boundaries to be expanded (Cousineau, 1978). Individuals gain self-awareness and self-confidence as a result of experiencing a challenging activity facilitated to understand and improve team relationships, group dynamics, cooperation, and communication (Miles & Priest, 1999; DuFrene, 1999; McKenzie, 2000).

Retention. A student enrolled IHE remaining at an institution through the point of graduation.

Student Learning Community. A community of students that incorporate active and collaborative learning activities and promote involvement in complementary academic and social activities that extends beyond the classroom (Kuh & Zhoa, 2004).

CHAPTER II

REVIEW OF LITERATURE

Student retention at IHE has been a problem that has seen little change. This literature review examines components of retention, the theory of learned resourcefulness and how it may impact retention rates, cohesion and student learning communities in relationship to retention, and the role which a challenge course program can play in student development and the enhancement of learned resourcefulness and cohesion in IHE.

Retention

There has been a plentiful amount of research focused on the issue of IHE student retention for decades. Prominent reviews of the literature on student retention include the works of Spady (1970), Tinto (1975), Cope and Hanna (1975), and Pantages and Credom (1978) and most recently Tinto (2007). The attention given to the issue of retention in higher education is warranted, because IHE invest large budgets for bringing students to their institution. Early departure from schools compromises the financial investments that are used for student recruitment (Thomas, 2002). IHE receive government funding based

on the number of students attending (Ahlburg, DesJardins & McCall, 2002). When attendance is high more funds are provided to the institution with little need to enhance their structure. If enrollment is low and funds are reduced, then beneficial programs are reduced.

Students who leave school prior to college graduation tend to not make as large a salary as do their peers who completed degrees as seen in table 2.1.

Table 2.1. Median annual earnings Ages 25 -33 by Educational Attainment

	2003	2004	2005	2006	2007	2008	2009
Less than high school education	$28,600	$25,900	$24,600	$22,300	$23,700	$22,800	$21,000
High school or equivalent	$36,400	$33,900	$31,600	$29,300	$31,100	$30,600	$30,000
Bachelor's	$46,900	$49,800	$48,100	$46,500	$49,800	$48,300	$50,000
Masters or higher	$46,900	$49,800	$48,100	$56,300	$56,100	$54,900	$60,00

SOURCE: U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement, selected years, 1981–2010.

Tinto (1987) suggests that there are monetary, social and occupational rewards to earning a IHE degree. In 1979, men between the ages of twenty-five and thirty-four years old earned and annual income of $15,226 while IHE graduates during that time earned $17,345. Current society continues to recognize the difficulty of gaining a degree from IHE with larger salaries and greater social status.

Despite the large body of research in higher education retention, there has been little change in retention rates. Tinto (1987) writes that more students leave their IHE prior to degree completion than stay. Summerskill (1962) suggests that the median loss of students in a four year higher education institution was 50 % and concluded that the retention rate had not changed between the years of 1920 and 1962. In 1993, 2.4 million students entered IHE, of those students 1.1million left without earning a degree (Tinto, 1993). Data from the American IHE of Testing Program suggest that the first year retention rate for students in four year IHE had remained unchanged from year to year (Hippel, Jonides, Lener & Nagada, 1998). Without changes at IHE, it is estimated that 41 of every 100 students who enter the higher education system will depart from school before earning a degree (Tinto 1987). In 1986 nearly 2.8 million students entered into the IHE system for the first time, over 1.6 million students left their first institution without receiving a degree. Within that group 1.2 million had left IHE (Tinto, 1987). Data from the American IHE of Testing Program indicated that the first year retention rate for students in four year higher education institutions had remained unchanged from year to year (Hippel, Jonides, Lener & Nagada, 1998). Less than 60% of first-time students who sought a bachelor's degree at a four-year institution in fall 2002 completed a bachelor's degree at that institution within six years (nces.ed.gov, 2011).

College Student Characteristics

There has been evidence in the literature to suggest that demographics do play a role in students who decide to leave their IHE prior to earning a degree. Prior to the first world war access to higher education was limited to an élite population of students who had the financial means to attend IHE (Davis, 2010). When American servicemen

returned from World War II, the Government Issue (GI) bill allowed military veterans the ability to go to IHE. This new population of students increased enrollment in IHE, and changed the demographic makeup of student populations. The GI bill brought students to universities from lower socioeconomic backgrounds, diverse ethnic backgrounds and people from rural communities.

In the middle twentieth century, the population of people in the United States began to change. The average birth rate the end of the 1950's was 3.7 children per mother; by 1990, the birth rate per woman was 1.9 children (Propenoe, 1993). Despite a decreasing population, Davis (2010) reported a 24.3% increase of students attending IHE is projected between the years of 2000 and 2015. The increase in the student population is due rather to federal programs such as PEL grants and Affirmative Action (Davis, 2010). These programs had been designed to increase opportunities for students from lower socioeconomic and ethnic backgrounds.

Evidence of IHE student departure describes clearly that those who choose to leave prior to achieving a degree are more likely to come from ethnic backgrounds, are from lower socioeconomic status and a less productive educational experience (Bean, 1980; Davis, 2010; Tinto, 1987). Davis (2010) suggests that 86% of students who entered into the nation's post-secondary education systems in fall 2005 were students of color.

Historical Perspectives of Retention Theory

Theoretical focus toward retention has centered on three aspects. (1) Psychological theories of retention look at a student and their performance in school (Boykin, 1994; Levin & Levin 1991), (2) environmental theories focus on IHE ability to retain students (Bean & Eaton, 2001) and (3) social development theories that integrate

all aspects if IHE on retention (Tinto, 1987). The first theory assumes that the students who do not graduate were unprepared for IHE. Furthermore, the individual enters an institution with attributes shaped by previous experiences, abilities and self-assessment (Bean & Eaton, 2001). Student departure is often a reflection of attitudes, skills, and motivation (Tinto, 2002). Student assimilation into the institutional environment depends upon their personal resources and their point of commitment to an institution.

Environmental theories on retention assume that various structural factors inherent in the IHE are responsible to support retention (Hippel, Jonides, Lener & Nagada, 1998). Ernest Pascarella (1985) assessed student success through the direct and indirect effects of both an institution's structural characteristic and its environment. Retention is related to the degree at which the school can meet a student's needs, typically through various programs and support such as financial aid, advisement and student orientation programs. Retention efforts of environmental theories have traditionally fallen on the shoulders of departments of Student Services on campuses and have led to the addition of courses and programs such as challenge course orientation programs (Tinto 2002). In the environmental theory, student departure was due to the environment of the institution not being able to meet the need of the student.

A historical perspective of IHE retention provides an understanding of how characteristics of student populations have changed over time and that institutional attention has increased. The evolution of theory on retention has shifted from a focus on students' abilities and attitudes, to the impact that can be developed by institutional efforts. Both of these theoretical perspectives have led to a more holistic view of retention which has become the common model of change in IHE retention.

Theoretical Foundation of the Theory on Institutional Development

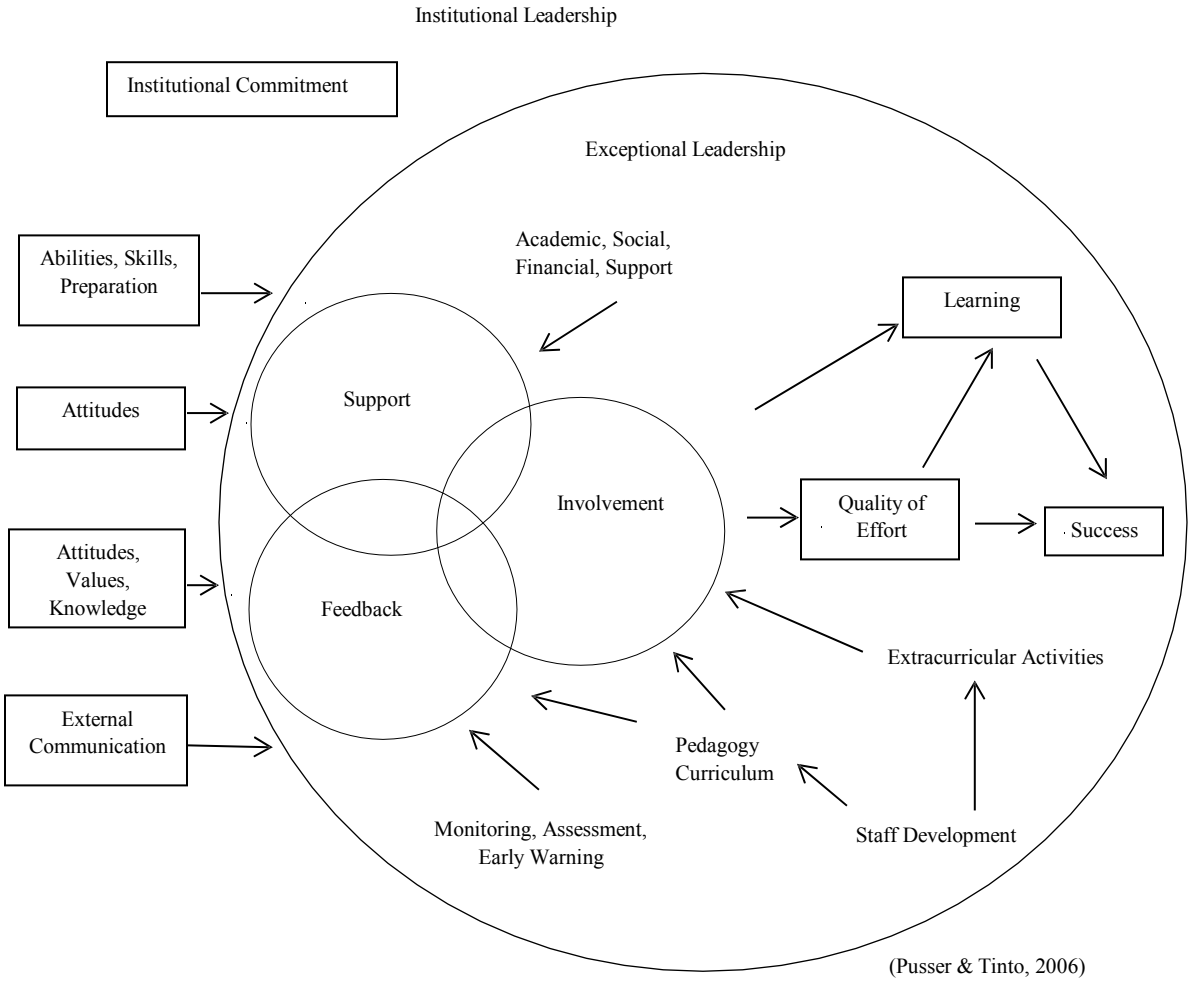
Recent efforts in IHE student development examine the student's interaction with the social structure of the institution and to the extent at which they were integrated into the institution (Hippel, Jonides, Lener & Nagada,1998). This approach emphasized the extent that the IHE structure, resources, and programs impact student learning and development. Arnold VanGennep theorized that people develop through life crises through series of individual passages. The author stated that individuals will pass through three phases as they assimilate into a culture (Tinto, 1987). Vincent Tinto (1987) applied VanGennep's idea to develop a social model for IHE student retention.

There are three phases to Tinto's (1987) original Theory of Institutional development. Phase one, separation from past communities, for example as a student from an IHE leaves home to attend a IHE they separate from attitudes and routines of their family life, church life and other aspects of that individuals community. Phase two is transition between high school and IHE, for example this student leaves an educational culture that they understand then join a culture where many things are new to them. Phase three is incorporation into the society of IHE, an example of the third phase is the student begins to embrace the culture and routine of the IHE. The student begins to dress in a common manner of the IHE and participate in social and academic events. These are the phases which a student passes through in order to gain successful membership into an institution of higher education (Tinto, 1987). Tinto's model views retention as a longitudinal process involving complex series of sociopsychological interaction between the student and the institutional environment (Terenzini & Pascarella, 1980). According to the theory a student brings to IHE epistemological attributes which influence their

performance and levels commitment (Pascarella & Terenzini, 1980). These characteristics interact with structural and normative features of an IHE then leads to varying levels of integration into the academic and social systems of the IHE (Pascarella & Terenzini, 1980).

Recognizing that students enter IHE with differing abilities and attitudes, the focus of the development of a model for retention has become placed on the institution (Tinto, 2002). The institutional model of action places emphasis on an IHE ability to support the student, provide them with timely feedback and to create opportunities for student involvement. As shown in Figure 2.1, when a quality effort toward these three factors is made the student will then learn and make the choice to stay at a particular institution. For example, creating student learning communities and opportunities for students to obtain learned resourcefulness skills through a challenge course experience may potentially lead to a student's ability to learn at a particular IHE and there for remain at that school.

Figure 2.1. Elements of a Preliminary Model for Institutional Development



Tinto (2002) suggested that the focus of the retention issue should be on educating students, "when the focus of retention is education, we will begin to retain students" (Tinto, 2002, p, 53). The literature regarding retention of students in IHE can be enhanced with the development of student learning communities and by teaching students learned resourcefulness skills (Tinto 2002; Keefer & Kennett, 2006; Ceyhan &Ceyhan, 2010).

Outdoor Recreation

Kurt Hahn is credited as an influential proponent for utilizing outdoor recreation as a tool for student development (Rohrs, 1970). Hahn was a German school master who developed an educational model incorporating more than the traditional school subjects into curriculum. The school master would not argue the importance of math, language, history, and other common subject, but would state that character development was gained through other types of experience. Studies of the arts, mastery of sport, community service, and some form of wilderness expedition travel was believed to be crucial to any student's character development. Hahn's educational model has been most noted for the aspect of wilderness travel (Rohnke, Tait & Wall, 1997; Rohrs, 1970). According to Hahn, in order gain a full education, at some point in a student's education they were required to participate in an extended wilderness expedition on land or at sea (Rohrs, 1970). Through these experiences a student would gain a sense of personal responsibility, service to others, and incorporation of traditional school subject matter into a practical context.

Hahn's educational philosophy inspired the Salem school systems in Germany, then the Gunny and Gordstone schools in England (Rohrs, 1970). These institutions developed reputations for the development of individuals who were able to provide leadership of industry in England. World War II created a need to train British Merchant Marines and Hahn was approached to provide this training which led to the organization of the Outward Bound School (Miner, 1981).

The Outward Bound experience centered on an expedition at sea, as men worked together for days on a small ship in the open waters of the Atlantic Ocean guided by the

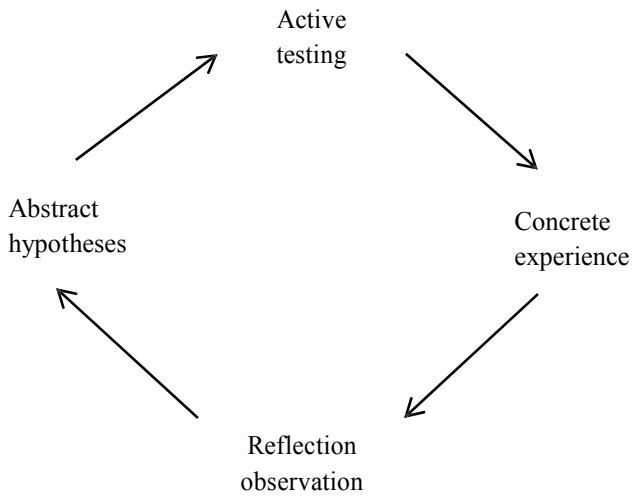
principles of the organization (Miner, 1981). Part of the daily routine involved climbing high on the challenging riggings and facing the challenges of an open sea environment. Self-development, social-development, values (one's own in relation to those of Outward Bound), environment, and service to others, were the principles that Outward Bound developed to lead students to character development (Miner, 1981). In 1962, Josh Miner was given permission to start a branch of Outward Bound near Leadville Colorado. In order to simulate the masts, sheets and sails of ships, a course was built in the trees at the new school site, which is recognized as the first known challenge course in the United States (Breuning, Cashel, Martin & Wagstaff, 2006).

Challenge Course

The challenge course is an outdoor recreation program that offers groups and individuals opportunities to participate in a series of activities which involve mental, physical, and emotional risk taking (Rohnke, Tait & Wall, 1997). The process is facilitated by an individual who has been trained and is aware of outcomes, participant perception of risk, and safety issues of a challenge course. Time on a challenge course is spent facing challenges and solving problems which are presented first as initiatives which are designed to produce group interaction and to develop group membership, then to low elements which are designed to increase a person's perception of risk and dependence on other group members. Finally, high elements at a challenge course that consist of a series of cables and poles elevated above the ground high enough to create a stressful environment which personally challenges individuals and forces them to depend on others for their safety.

Outcomes from a challenge course experience are gained through a process involving an experience, dissonance, reflection, and transference of learning (McKenzie, 2000). David Kolb's experiential learning cycle has been a common model used to guide challenge course facilitation (Mehi & Wolf, 2011). Kolb (1984), produced a holistic model defining learning as a part of a process which combines the students beliefs and ideas with a problem to be solved, resulting in synergetic transactions between persons and the environment (Kolb & Kolb, 2005). In order for learning to take place, a student moves through this cycle starting by actively testing thoughts and ideas, transitioning to a concrete experience, the student then becomes engaged in a period of reflection. Reflection leads individuals to the development of abstract hypotheses based on the experience before returning to the active testing phase. For example, a student may be asked to climb a telephone pole and stand on the top of it with a goal of leaping off and catching a trapeze bar. After completing the task the student may reflect back on the task and develop the awareness that some tasks are perceived as impossible may indeed be possible. According to Kolb and Kolb (2005) this sense would then become incorporated into a new perception of ability for this individual (see Figure 2.2).

Figure 2.2 Kolb's Experiential Learning Cycle



(Kolb & Kolb, 2005)

The Outward Bound School originally used the challenge course to prepare students for expedition travel (Rohnke, Tait & Wall, 1997). They now have become methods for therapeutic, cooperative, and educational development (Gillis & Speelman, 2006). IHE have developed applications of challenge course programming to aid in student development. Challenge course programming has been incorporated into wilderness orientation programming, to prepare students for multi-day expeditions (Gass, 1987, 1990). Challenge course programs have also been used to successfully develop college student residential communities (Akey & Bobilya, 2002). In a study examining the impact of students perceptions of a challenge course experience, students reported to feel closer to those who attended the program and developed incites for working in a team (Table 2.2).

Table 2.2 Student Perceptions of the Impact of a Challenge Course Experience

Connections to students, Faculty, and the IHE	Self-Learning and Transferable Skills	Support for Academic and in Class Learning
Awareness and development of peer support	Development of critical thinking skills	Peer academic support relationshi ps
Social Integration	Personal since of competence	Personal relationships with facult y
Development of community through trust, communication, and respect	Teamwork within a community	Personal since of competence
Personal relationships with faculty		Development of critical thinking skills
Common bond through a shared experience for learning		Alternative environment
Alternative environment for socialization		

(Akey & Bobilya, 2002)

Akey and Bobilya (2002) directly addressed the use of the challenge course for developing student learning communities at IHE. Participants in this study reported common themes of developing trust with others, an awareness of other's needs, a sense of learning how to support others in their group and a sense of cohesion. Other researchers have noted cohesion as an outcome of a challenge course experience (Benshoff & Glass, 2002). Cohesion with others in a group developed in a challenge course experience has been likened to the therapeutic relationship that a client has with a therapist in the psychoanalytic model (Griffin & Pennscott, 1991).

Other outcomes of the challenge course relate to a student's intrapersonal skills and are the same skills as those seen in the theory of Learned Resourcefulness (Rosenbaum 1989). Creation of an unfamiliar environment as well as providing the participant with the freedom to experiment with new strategies can provide an individual with a new sense of identity (Bacon & Kimball, 1993). This environment is thought to encourage self-awareness and self-responsibility. McKenzie (2000) has written about outcomes of challenge course programming. A challenge course experience enhances a person's ability to make plans in a stressful environment, develop critical thinking skills,

monitor and evaluate ones' actions, positive self-instruction and to be a team member within a community (Akey & Bobiliya, 2002; Mckenzie, 2000).

The challenge course is intended to be a stressful environment that lends itself for opportunities of mastery of skills (McKenzie, 2000). Taking the time needed to complete tasks well is encouraged. Mastery and successes are believed increase positive outcomes for example; success is believed to be related to an enhanced sense of personal self-efficacy (Bandura, 1997). Self-efficacy is an aspect of learned resourcefulness which has been associated with retention in IHE (Akgun & Ciarrochi, 2003; Keefer & Kennett, 2006).

Cohesion and Student Learning Communities

Kuh (1996) presents principles which guide institutional efforts to enhance student learning and personal development by more purposefully integrating curricular goals and outcomes with students' experience outside the classroom. Integration of academic and social activities into a meaningful association is required to convert an experience into authentic learning. According to Kuh and Zhao (2004), the result is a deeper experience; learning becomes more personally relevant and becomes a part of who the student is. To create this effect, learning communities are structured for the student to make two types of connections. The first is for the student to connect to new ideas. The connection is linking students to others through ongoing interactions. Second, students then become a member of a community focused on academic content which allows them to further develop their identity and to integrate what they are learning into who they are. For example, "mountain tops" is a known challenge course element involving two separate groups of people standing on separate platforms with a third platform placed at

an angle between. The participants are asked to switch platforms without touching the ground and are given three different sized boards in order to build a bridge. None of the boards are long enough to reach from platform to platform. Therefore, the participants learn to design a bridge using the concept of fulcrum points. As the participants go through this process the concepts involved in solving this problem become learned with one another and gain a deep level of understanding.

Vygotsky also has developed a theory related to students learning as a community. With his model, instruction is not viewed as an end in itself but the relationship between subject matter and the student results in psychological development (Vygotsky, 1987). This concept led to the development of the Zone of Proximal Development (ZPD) theory. Applying this model to work with children Vygotsky concluded the following, "what a child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1987, p.211). ZPD centers around a student's interaction with an experienced individual, social interaction focused on a particular topic and an activity that produces dissonance to an individual. The result of ZPD is that the individual changes cognitively, as a learner develops an understanding for the process of how a problem is solved through interactions with other people (Magnusson & Palincsar,
2006).

Tinto (2002) suggested that the best way to connect students' academic engagement to their social environment was through student learning communities. The University of Wisconsin, in the 1920's produced the first student learning community program which provided evidence of academic benefit (Smith, 2001). Contemporary versions of learning communities began to emerge in the 1980s as growing recognitions

that student engagement in activities beyond the classroom had an influence on student learning and personal development (Kuh, 1996; MacGregor, 1991; Kuh & Zhao, 2004). Kuh and Zhao (2004) randomly selected data of 8,479 first –year and senior college students from the National Survey of Student Engagement data base. Using this data they discovered participation in student learning communities was uniformly and positively linked to academic performance, school engagement in activities, school attendance, and an overall satisfaction of a college experience. Research has suggested that learning communities qualify to be added to the list of successful educational practices (Berrill, Kennett, Stedwill, 2011). Further research compared achievement between students who participated in student learning communities with student who studied on their own. Findings implied that those who engage in some form of learning communities appear to benefit academically. This study also revealed that students who freely choose to participate in learning communities also tend to exhibit higher learned resourcefulness scores (Berrill, Kennett, May, Stedwill, Tara, & Young, 1996). This work links the concepts of learning communities to learned resourcefulness, where both have been connected to retention (Kennett, 2006).

Components defining learning communities are geography, common interest and a common anticipated outcome (Barrett, Kilpatrick & Jones, 2003). Kuh and Zhao (2004) state that successful learning communities incorporate collaborative learning activities and promote involvement that complement academic and social activities which extend beyond the classroom.

Kuh and Zhoa (2006) confirmed through their research that student learning communities are positively related to student success in IHE. Student collaborative

learning has yielded enhanced academic performance, integration of academic and social experiences and positive perceptions of IHE environments. Kuh and Zhao (2006) confirmed that the development of student learning communities is effective in enhancing retention rates of IHE.

Cohesion is "The essence of relationships with in a group" (p. 71), it is the forces that cause members to remain in the group over time (Burlingame, Fuhriman & Johnson, 2002). In order for a community to be successful cohesion must be present. Cohesion is a factor of student learning communities that can be measured trough the Group Climate Questionnaire short form (GCQ-S) (MacKenzie, 1983).

Learned Resourcefulness

Different environments may create certain challenges for people. When faced with difficulties and stressful situations, there are some people who thrive and others who stop trying (Rosenbaum, 1980; Kennett & Keefer, 2006). Those who rise to challenges are using problem-focused strategies viewed as self-control skills. In the past thirty years, these skills had been used in clinical settings as an effort to train clients to become more independent in their immediate environment and to alter behavior despite the presence of stressful external stimuli (Rosenbaum, 1980). Most psychological stressful situations result from interruptions of habitual thoughts or actions. These interruptions cause a person to make conscious efforts to perform targeted tasks. Self-control behaviors are activated when typical coping methods are not available. Learned resourcefulness skills are the focus of individuals who need to relieve themselves of bad habits and behaviors that cause problems in their lives. Continued development of self-control skills, have led to the labeled resiliency skills as a product of Michael Rosenbaum's (1988) Self Control

Scale (SCS). He coined the term "learned resourcefulness" to describe the cognitive-behavioral repertoire of self-control skills (Rosenbaum, 1988).

Rosenbaum (1980 &1989) stated that all human behavior is goal directed, individuals engage in self-control behaviors when disruptions in life arise. Those known to be highly resourceful make use of positive self-instruction, apply problem solving methods, delay gratification, and employ other self-control strategies. Possession of a larger repertoire of self-control skills helps people deal with negative emotions, break bad habits, adhere to regiments, carry out boring but necessary tasks and overcome other obstacles in life (Keefer & Kennett, 2006).

The focus of learned resourcefulness has shifted recently to populations outside of the clinical environment as a tool for working with at-risk youth. Resiliency in youth is seen as the ability to identify risk factors, to overcome those risks and avoid negative outcomes. Research has suggested that resilient children are able to overcome personal and environmental characteristics to reduce the likelihood of dysfunction and disorder (Gillespie & Allen-Craig, 2009). At risk youth participated in a five week wilderness experience where they were expected to interact with others as well as have individual time with facilitators. The researchers indicated a significant increase of resiliency in these children after a backcountry expedition. Using an outdoor recreation setting, Allen-Craig and Gillespie (2009) apply theory of resiliency to a non-clinical environment. Kennett, Morris & Bangs (2006) used the learned resourcefulness model to assist young people with smoking cessation. These authors research suggest that those who were more successful and quitting smoking were more resourceful (in terms of Rosenberg's theory) than those who were not successful. Keefer and Kennett (2006) provide an example of

application of learned resourcefulness to an IHE environment. Keefer and Kennett suggest that IHE student who has higher levels of Learned Resourcefulness skills complete college degrees. In their research, they suggest that Learned Resourcefulness skills are generally acquired early in one's life but may be obtained at a later age.

Making a connection between life style changes, resourcefulness, and coping with environmental stress expanded the use of the learned resourcefulness model. For example, the issue of college student retention, attending an institution of higher education is a stressful change for students. In this novel situation there are some students who are successful and some who are not. Higher education institutions have had little success in changing retention rates in the past thirty years (Tinto, 1987). Research completed by Kennett and Keefer (2006) produced results which implied that college students who were scored higher on the SCS where more likely to complete a degree program. This particular study coined the term "academic self-control" and acts of an example of how learned resourcefulness can be used on a non-clinical setting to help people persevere under increased environmental stress and challenges to their self-control.

CHAPTER III

METHOD

The research question in this study was how participation in a challenge course program alters personal learned resourcefulness skills perceptions of cohesion. Approval for this study was sought by the Institutional Review Board at Oklahoma State University (OSU) and approved on October 23, 2012. This study utilized a non-randomized control group repeated measures design, with the experimental group consisting of college students receiving the challenge course experience and the control group consisting of college students that did not receive the challenge course experience.

Students in the study were administered the Self-Control Schedule (Rosenbaum, 1980) and the Group Climate Questionnaire-Short (MacKenzie, 1983). The experimental group completed both scales twice, once prior to treatment phase then again after treatment. The control group was administered both scales twice during sessions one month apart.

Participants

Students participating in this study were sampled from the College of Agriculture Sciences and Natural Recourse (CASNER) Freshman in Transition (FIT) program at OSU, which is an incoming student orientation program sponsored by the CASNER.

There were 125 students who participate in CASNER FIT program, all lived in the Village West dormitory on the OSU campus and had declared to pursue a degree from the CASNER. These students met as a whole group twice each month and in small groups on alternating weeks.

Participants in this study consisted of a convenience sample selected by the snowball method and were male and female students the age range from 18 – 19 years. Freshman students at Oklahoma State University are required with few exceptions to reside on campus. Therefore, it may be assumed that this population will represent the first year student population at the university. Student learning communities consisted of students in the CASNER FIT program that live on the first or second floor of the Village West dormitory. Students met with members on their floor during floor meetings discussing floor business as well as, topic of academic success and individual development on campus.

The sample for the study was gathered from 125 undergraduate students during the academic year of 2013. The experimental group were students from CASNER FIT living in the Village West which is a dormitory associated with OSU Residential Life Department. CASNER FIT was selected as part of a special initiative developed by OSU CASNER to increase retention. The challenge course experience was offered as part of the FIT initiative. Students who participate in the CASNER FIT program were given a choice to take part in this study. The 125 students who are part of the FIT program were be given a choice to take part in this study. Forty CASNER FIT students chose to take part in the study.

The control group for this study was selected form the CASNER FIT students who choose not to participate in the challenge course program. Students that took part in the control group received no treatment during the testing period of the study but did have an opportunity to attend the challenge course during the spring semester. Students will be asked to participate in the control group during scheduled floor meetings.

Procedures

Members of the experimental group participated in challenge course event that took part in a two week period. The following outlines the experimental procedures of this study, the time line (Appendix D).

Day 1: Program orientation; 7:00pm

Participants arrived with their learning community members at Oklahoma State Universities challenge course at Camp Redlands where they met the group's trained facilitator. The facilitator gathered participant's release forms, provided participants with the information about the study form (appendix D) administered the SCS (appendix A), the CQS-S (Appendix B), and a demographics questionnaire (appendix E). Upon completion of surveys the facilitator described the day's activities, share safety information and introduced the concept of challenge by choice.

Warm-up activities; 7:15- 815 pm

For the first hour of the challenge course experience, students were asked to participate in a series of activities aimed at personal introductions, basic group development and as a physical warm-up. The following activities were used in this study.

Human Geography: Students were be asked to view their immediate surroundings as a map, they were asked to go to certain meaningful spots on this map simultaneously with the others in the group then discuss with the other where they had gone. The following are the locations that they went to the place that they were born, the place where they once had a memorable meal, the place where they had a life changing experience and where they expect to be in the future. This activity was debriefed by a staff facilitator focusing on the group's interactions and individual disclosure.

Hospital Tag: Students were asked to stay within a limited space and play a tag game where each person is tagged twice before becoming frozen. In this activity everyone could tag others and it is played until there was only one person left unfrozen. The purpose of this activity was to introduce slight physical contact and physical warm-up. Staff facilitators moved to the next activity without discussion unless it solicited by group members.

Group Stretching: The facilitator led the group through a process of stretching muscles as part of conditioning for the day's events. Staff facilitator's explained in more detail the physical demands of the day encouraging hydration self-assessment of physical abilities and group interaction centered on the safety of the entire group.

Tusker: One student was asked to tag other students. When a student became tagged they join the tusker and assisted them in tagging others. The activity continued until all of the students had been tagged. The facilitator used this activity to facilitate a conversation about group membership and group normal behavior. The primary question asked by facilitators at that point was why do people join or avoid joining specific groups and what might encourage you to be a member of this particular group.

Full value contract; 8:15 – 9:00pm

The group's facilitators initiated a conversation with the group about rules of behavior throughout the day's activities. The group was then be asked to develop a short list of rules specific to themselves. Each member made a commitment to all others in the group to agree to follow those rules.

Day 2: Initiatives; 7:00pm

Initiatives were low physical risk activities which take place on the ground. They were activities introduced through imaginary stories intended to present to the group problems to solve. Initiatives were designed for groups to develop interpersonal and intrapersonal skill through the process of group problem solving.

Save the Princess: An item was be set against a tree in the center of a 20 foot diameter circle. The group retrieved it without stepping foot inside the circle. The only tool that the group was able to use was a 60 foot length of retired climbing rope. When completed, the facilitators instigated a group discussion on team work, individual roles in the group and communication.

Helium Stick: In this activity the group formed two lines that face each other. The facilitator placed a light weight stick on the outstretched hands of the team members. As a group the group lowered the stick to the ground as everyone maintained constant contact with the stick. When completed, the facilitator led a group discussion of group communication, goal setting, how to handle possible frustration with-in the group while at task, delayed immediate gratification, and affective aspects of completion of task.

Low elements; 8: pm

Low elements are designed for groups to develop interpersonal and intrapersonal skill through the process of group problem solving in situations with slight perceived risk.

Islands: For this activity, students were divided into two groups where they were be asked to stand on two of three small platforms that are eight inches tall with resources consisting of three long boards. Participants were asked to move to the platform that the other group was placed on by moving across the third platform. When this task was completed the facilitator led a group discussion on team work, leadership, caring for the safety of others and working under stressful conditions.

Over-Under Table: All students stood on a four foot by six foot table like platform that was four feet off the ground. The group then worked together to pass each participant under the platform to the other side without letting them fall to the ground. When this task was complete, facilitators led a discussion on making decisions and working under stressful conditions, physical stress and group planning.

Day 3: High challenge course; 1:00pm – 430pm

The high course consisted of a system of cable bridges which a participant negotiated at 55 feet above the ground. Students exited the challenge course via a 300 foot long ride on a zip line. While going through the challenge course, students were choose their route based on the level of difficulty that they believed they would like to experience. All students were equipped with safety equipment and trained in how to move through the course safely. Each student worked with a partner who was responsible for communicating with the participant and overseeing safety issues for them. When a student has completed the course, they switched roles with their partner.

After all students had completed the high challenge course, the group's facilitators led a discussion on functioning under physically and emotionally stressful conditions. Following that the entire day the group was debriefed.

Posttest; 4:30 – 5:15pm

After completion of a day on the challenge course the experimental group was led to the lodge at Camp Redlands where they will be asked to complete the post-test questionnaires (SCS, GCQ-S).

Data Collection

Control group participants were asked during their January 2013 CASNER FIT meeting to complete both the SCS and the GQC-S. Participants who had completed the pre-test for the control group were asked in the same manner, to take both surveys a second time during the following meeting two weeks later.

Participants who take part in the experimental treatment completed two surveys. The first assessing self-control utilizing the SCS, and then assessed was perceptions of the group environment by the GCQ-S. Both surveys were completed by participants prior to participation in the challenge course experience to establish a baseline score for each independent variable (Student learning communities and learned resourcefulness) and a student information form was completed. The SCS and the GCQ-S were then was administered to all treatment group participants upon completion of the challenge course experience. The control group was asked to complete both surveys in the semester establishing a baseline score for the control group. A post-test utilizing the same scale was administered two weeks later.

Every effort was made to insure the safety and confidentiality of the participants in this study. The raw data collected for the participants of the study was assigned an identification number selected from a table of random numbers to insure anonymity. The data was stored in a locked file in the dissertation advisor's office. Once the study was completed the coded data was destroyed ensuring confidentiality.

Instruments

Two instruments were used to address the research question in this study. The Self-Control Scale (SCS) was used to measure learned resourcefulness (Rosenbaum, 1980). To measure cohesion the Group Climate Questionnaire- Short (GCQ-S) was used.

Leaner Resourcefulness; Self Control Scale (SCS)

The Self-Control Schedule (SCS) is a self-report instrument used to measure individual tendencies which apply to self-control or a set of skills known as learned resourcefulness (Rosenbaum, 1980). The SCS is comprised of 36 items that account for four functions of self-control; (a) use of cognitive ability "self-statement" to control emotional and psychological responses, (b) the application of problem solving strategies, (c) the ability to delay gratification and (d) perceived self-efficacy. Responses to questions on the SCS are placed on a six-point scale ranging from +3 to -3 "very characteristic of "like me" to "very uncharacteristic of me". Score on the scale are computed and determine a standard score.

Sample data were used to assess test-retest reliability of the SCS (Rosenbaum, 1980). The mean score on the first testing was 25.1 (SD = 23.7) and on the second testing was 24.4 (SD = 25.1). The Pearson's correlation between the scores on the two testing periods was .86 ($p < .01$) indicating a high stability of test scores over a four week period.

The internal consistency of the SCS items was calculated on data gathered from samples by the use of Kuder-Richardson formula 20. The alpha coefficients obtained for test samples reached levels of reliability considered to be satisfactory for experimental purposes (Rosenbaum, 1980). The SCS means for students ranged from 23 to 27. The means for males in the evaluation sample were 23.1 (SD = 21.4), 25 (SD = 22.4), and 26.1 (SD = 24.0), and for females 24.6 (SD = 23.2), 26.1 (SD = 24.0), and 25. 6 (SD = 22.4).

Validity of the SCS was calculated by examining scores between two scales. The first is Rotter's I-E scale which measures internal or external locus of control. Persons reporting high self-control are expected to adopt internal locus of control. The second scale which the SCS was compared to was the Irrational Beliefs Test (Jones, 1968). The IBT measures a person's "self-verbalization". Appropriate of rational self-verbalization is thought by Rosenbaum to be associated with self-control. Pearson's correlation coefficient was computed between the SCS and each subscale.

Group Climate Questionnaire- Short (GCQ-S)

The GCQ-S was designed to assess the perceptions of a group environment by an individual member (MacKenzie, 1983). This scale has been selected for this study for its ability to measure an individual's perception of the cohesion of their group membership. The original form of the GCQ (MacKenzie, 1981) had 32 items which were divided into eight sub scales. After a factor analysis of the measure was performed, the shortened form was created containing 12 items with three dimension; engagement, avoidance, and conflict. Items rated on a six point Likert scale indicating the extent of agreement ranging from 1 (not at all) to 6 (extremely). Items were dropped from the original instrument if

they loaded heavily on more than one dimension or did not load on any one scale at greater than .50 levels. A final Item, #12, was added to measure interpersonal uneasiness and tension. This item serves as an indicator of general group tension. It reads, "The members appear tense and anxious."

Psychometric properties of the GCQ-S have been established in a number of studies. Normative data was established by using an outpatient psychotherapy population between the ages of 18 and 50 with 75 people in 12 different groups. Over a period of 35 sessions, 1,150 ratings were obtained with means and standard deviations from both participants and therapists. Kivlighan and Goldfine (1991) calculated alpha coefficients of .94 for the Engagement dimension, .92 for Avoidance, and .88 for Conflict. Interscale correlations in a different study by MacKenzie (1983) were shown to be -.44 between Avoidant and Engagement, .18 between Conflict and Engagement, and .30 between conflict and avoidant, suggesting that the scales overlap some, but the constructs and different.

Braaten (1989) construct validity in the GCQ-S was supported by showing a significant degree of correlation between cohesion variables form the GCQ-S, such as engagement, and positive outcome variables in the Global Projects Index (Braaten, 1989), an instrument that was designed to measure change in participants. Convergent validity was supported by showing a high degree of inter-rater reliability between staff observers and group participants (Kanas, 1984).

The GCQ-S has been used to asses changes in clinical and non-clinical groups (Hurley& Brookes, 1985; Kanas & Barr, 1986 & MacKenzi, 1993). These studies have supported the construct of validity of the GCQ-S by demonstrating that in more

successful groups, participants reported greater engagement, conflict, and anxiety with less avoidance. Kopf (1997) utilized the GCQ-S in a challenge course setting to measure group effectiveness of activity sequencing as well as the Group Environment Questionnaire (GES). A principal component analyses on the GES and GCQ-S for the study indicated that the individual scale items mainly loaded on the expected factors. Both were fairly accurate in matching the predicted loadings for this study indication that the challenge course environment had no effect on the application of the CGQ-S.

Analysis of Data

This study utilized statistical analysis with the Statistical Package of the Social Sciences (SPSS) with a pre-determined alpha set at $p < (.05)$. Multiple regression was designed to answer the questions; how well does one set of predictor variables estimate the criterion? What was the relationship between any given predictor and the criterion? How much change in the criterion could be associated with each predictor (Pedhazur, 1997)? The specific technique utilized was a hierarchical linier multiple regression because it may potentially validate the results on the SCS and the GCQ-S with an *F*-test, developed a standard multiple correlations coefficient for predictive ability and potentially develop a prediction equation for the sample (Pedhazur, 1997). Standard multiple regression was able to examine the difference in the explained variance of multiple independent variables on a single dependent variable while using intact groups. The assumptions associated with this statistic are that independent variables are fixed, the residuals are distributed normally around the mean, individual scores are linier, and that measurements of the independent variables are reliable (Pedhazur, 1997). The design of this study met these assumptions. simple multiple regression was an appropriate statistic

to examine the differences between pre-test and post-test scores on the SCS and the GCQ-S.

CHAPTER IV

RESULTS

The purpose of this study was to investigate how the use of challenge course programming can alter learned resourcefulness skills and the perceptions of cohesion in a student learning community. Using a non-randomized control group pretest – posttest trial between subjects design, participants were assessed for levels of learned resourcefulness using the Self Control Scale (SCS) and for perceptions of group cohesion with the Group Climate Questionnaire – Short form (GCQ-S) form prior to participation in a challenge course program. The research questions for this study were: (1) How does a challenge course experience change learned resourcefulness skills in Oklahoma State University CASNER FIT program's students? (2): How does a challenge course experience effect felling of cohesion among students participating in the Oklahoma State University CASNER FIT program? A total of 40 freshmen from the College of Agriculture Science and Natural Environmental Resources (CASNER) Freshmen In Transition (FIT) program chose to participate in the study. Twenty students self-selected to participate in the experimental group which took part in a two week challenge course activity after completing pretest questionnaires. The experimental group completed posttest questionnaires upon completion of their challenge course experience. Twenty other students from the CASNER FIT program self-selected to participate in the control

group of the study. These students were given the pretest questionnaire during a FIT

meeting then they completed the posttest questionnaire two weeks later, prior to the next group meeting.

Descriptive Statistics

The experimental group consisted of 20 participants made up of 12 females and eight males, 18 participants were 18 years of age and two were 19 years of age, 17 of those students graduated high school from rural areas, while three were from urban areas. Participants of the experimental group were asked to complete the SCS, the GCQ-S, and a demographics questionnaire prior to the challenge course program to gain pretest measurements. After completing the two week program, participants were again asked to complete the SCS and the GCQ-S to obtain their posttest scores. Reliability of both scales was determined using Cronbach's Alpha. Alpha for the SCS was .70 and Alpha for the GCQ-S was .74. Table 4.1 displays descriptive statistics for the experimental group.

Table 4.1 Means, Range, and Standard Deviation Scores for Experimental and Control Group

	Experimental (n=20)					
	Self-Control Scale			Group Climate Questionnaire-Short		
	M	*SD*	*Range*	*M*	*SD*	*Range*
Pretest	30.75	14.38	1 – 73	43.20	04.50	35 – 53
Posttest	36.70	11.05	15 – 61	44.95	05.78	32 – 56
	Control (n=20)					
	Self-Control Scale			Group Climate Questionnaire-Short		
	M	*SD*	*Range*	*M*	*SD*	*Range*
Pretest	27.85	15.61	-1 - 62	43.25	05.78	30 -56
Posttest	29.45	14.75	2 - 59	44.95	04.48	32 - 58

Means for both the SCS and the GCQ-S increased after participants took part in the challenge course experience. Other descriptive statistics reported in table 4.1 indicate that the standard deviation between individual test scores decreased after the experience for the SCS but increased after the experience for the QCQ-S. The range of scores on the SCS the range of scores decreased after the experience while the range of scores for the GCQ-S increased. The increase in mean scores for both the SCS and the GCQ-S suggests that the challenge course experience increased resiliency and feelings of cohesion in the group.

The control group consisted of 20 participants, nine of whom were female. All participants in the control group were 18 years old, 17 graduated high school from rural communities with three from urban areas. Participants in the control group were asked to

complete the SCS, the GCQ-S and a demographics questionnaire prior to a routine meeting for the CASNER FIT program. Control group participants were asked to complete both the SCS and the GCQ-S two weeks later at the following CASNER FIT meeting to gain posttest measures. Table 4.1 displays descriptive statistics for the control group.

Posttest score means for both the SCS and the GCQ-S increased while means for the GCQ-S did not increase. Other descriptive statistics reported on table 4.2 indicate that standard deviation between individual test scores decreased between pretest and posttest scores on both the SCS and the GCQ-S. The Range of scores for both the SCS and the GCQ-S remained constant through both analyses. The increase in mean scores for both the SCS and the GCQ-S suggested that the challenge course experience did increase scores of resiliency and feelings of cohesion within the group.

Simple Multiple Regression utilizes the F Test to further examine the differences within the control group. Table 4.2 displays F Test values and P-values suggesting the significance of the differences.

Table 4.2 Ominous F Test scores for SCS and GCQ-S Control Group Comparisons

	Pretest-Posttest		Pretest/ CTL-EXP		Posttest/ CTL-EXP	
	F	P-value	F	P-value	F	P-value
SCS	.49	.45	.30	.59	.76	.39
GCQ-S	.21	.66	.66	.42	1.27	.27

Evaluation of each comparison made for the control group there were no significant differences indicated. Comparisons made between the control group and the experimental group for both the SCS and the GCQ-S yielded no significant scores. This would indicate that prior to the challenge course experience there was no difference in

test scores between the samples indicating that the scores are representative of the same population.

Comparison between Experimental Group and Control Group

The relationship between pretest scores and posttest scores on both the SCS and the GCQ-S were examined to determine if there were any differences between the experimental group and the control group. The statistical program IBM Statistical Package for the Social Sciences 20 (IBM SPSS 20) was utilized to compute a Simple Linier Regression with an alpha level for significance of .05 in order to see if there was a difference on both measures between the pretest and the posttest.

Linier Regression was used to examine the variation accounted for in test scores on the SCS and the GCQ-S after participation in a challenge course program by comparing how those scores relate to the pretest scores. Simple Linear Regression was used to examine possible changes in instrument scores, comparing pretest scores between the control group and the experimental group scores between the pretest and the post test of the experimental group and scores between the control group and the experimental group posttest scores. For this study, Simple Liner Regression produced three statistics which were used to assess the relationships between pretests and posttests: Pearson Correlation Coefficient, R Square, and Analysis of Variance (ANOVA) which expresses the Ominous F Test (F).

Pearson's Correlation Coefficient was a measurement of the degree of relationship between two variables. A correlation is gained by dividing covariance of two variables by the standard deviation to produce a measure of the relationship between two variables which incorporates the size of the standard deviation. Table 4.3 displays the

correlations and the level of significance of that relationship between pretest scores of the experimental group and the control group for scores on the SCS.

Table 4.3 Correlations Between SCS scores for Experimental and Control Groups

		Ctl Pre-test	Tx Pre-test
Correlation	Ctl Pre-test	1.00	
	Tx Pre-test	.128*ns*	

Pearson Correlation Coefficient (*r*) is a measurement of the strength of the relationship between the experimental group and the control group. For this comparison, R was reported at .128 with a *p*-value of .295 which suggests that there was not a significant relationship between the experimental group and the control group scores on the SCS and the GCQ-S prior to the challenge course experience. The squared multiple correlation coefficient (SMC) presented in this case was .016. Whereas about 2% of the total variability in pretest scores on the SCS for the control group can be accounted for by scores on the pretest scores for the treatment group.

The Ominous F Test was utilized to determine the level of significance of the relationship between the control group and the experimental group. Table 4.4 displays the results of the ANOVA for the comparison between the experimental and control group for SCS scores.

Table 4.4 ANOVA Table for Experimental and Control for the SCS

	Sum of Squares	df	Mean Squares	F	Sig.
Regression	76.229	1	76.229	.301	.590
Residual	4556.321	18	253.129		
Total	4632.550	19			

The F value for this comparison was .301 with a p-value of .59 which suggests that variability in SCS scores for the control group cannot be explained by SCS scores for the experimental group. Both groups in this case appear to represent the same population.

Three statistics were utilized to assess the relationship between scores on the GCQ-S for the experimental group and control group: Pearson's Correlation Coefficient, squared multiple correlation coefficient (SMC), and ANOVA. Table 4.5 displays the correlations and the level of significance of that relationship between the two groups.

Table 4.5 Correlations GCQ-S Scores for the Experimental Group and the Control Group

		Ctl Pre-test	Tx Pre-test
Correlation	Ctl Pre-test	1.00	Pearson
	Tx Pre-test	-.189*ns*	

For this comparison, *r* was reported at -.19 with a p-value of .213 which suggests that there was no significant relationship between the experimental group and the control group scores on the SCS and the GCQ-S prior to the challenge course experience. The SMC presented in this case was .04. Whereas about 4% of the total variability in pretest scores on the SCS for the control group can be accounted for by scores on the pretest scores for the treatment group.

The F Test was utilized to determine the level of significance of the relationship between GCQ-S scores for the control group and the experimental group in this study. Table 4.6 displays the results of the ANOVA for the comparison of GCQ-S scores between the pretest and posttest.

Table 4.6 ANOVA Table for Experimental and Control Groups for the GCQ-S

	Sum of Squares	df	Mean Squares	F	Sig.
Regression	20.866	1	20.866	.664	.426
Residual	565.684	18	31.427		
Total	586.550	19			

The F value for this comparison was .664 with a *p*-value of .43 which suggests that there was no significant variability in GCQ-S scores for the control group that could be explained by GCQ-S scores for the experimental group. Both groups in this case appear to represent the same population.

Statistical Outcomes for the SCS

The first question was: Can scores of learned resourcefulness be increased after taking part in a challenge course program? The SCS was utilized to measure participant's levels of learned resourcefulness prior to and after participation in a challenge course program.

Pearson's Correlation Coefficient was used to examine the strength of the relationship between pretest scores and posttest scores on the SCS. Table 4.7 displays the correlation between the pretest and posttest scores of the SCS.

Table 4.7 Correlations of SCS Scores for Pretest and Posttest of the Experimental Group

		SCS Pre-test	SCS Posttest
Pearson Correlation	SCS Pre-test	1.00	.374
	SCS Posttest	.374*ns*	1.00

When comparing the pretest and posttest scores on the SCS correlation coefficient was reported at .37 with a *p*-value of .052 which is a statement that there was no significant relationship for scores on the SCS between the posttest and the pretest for the experimental group. The Standard Multiple Correlation (SMC) presented in this case was .14; therefore about 14% of the total variability in posttest scores on the SCS for the control group can be accounted for by scores on the pretest scores and posttest scores.

Table 4.8 displays the results of the ANOVA for the comparison between pretest and posttest scores of the SCS. The ANOVA examines the significance of the effect that the challenge course experience had on the posttest scores on the SCS.

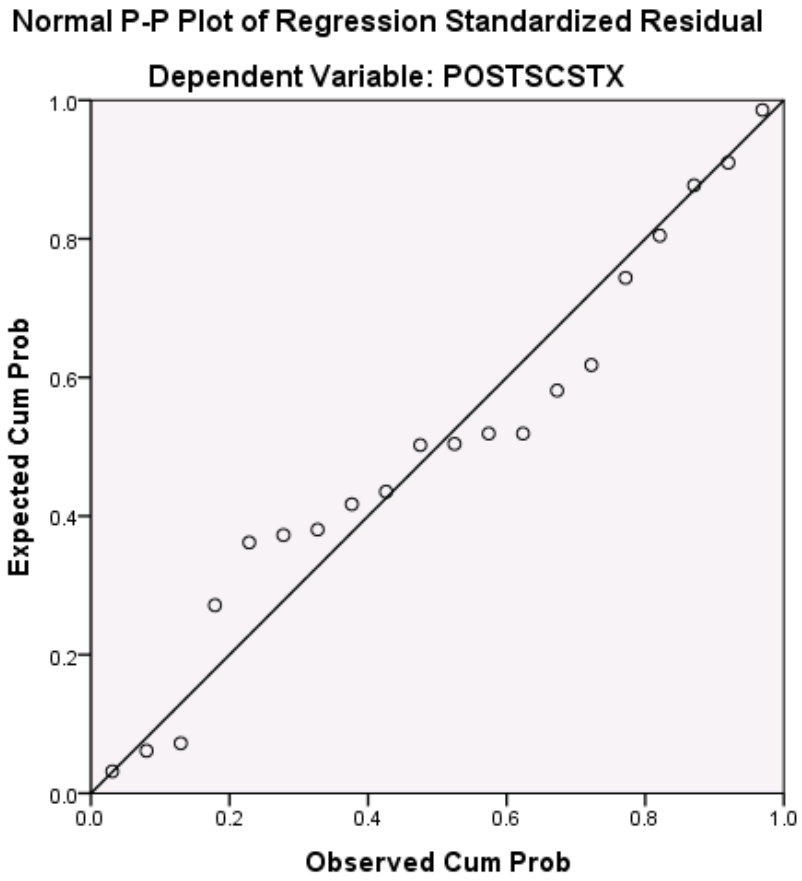
Table 4.8 ANOVA Table Comparing Pretest and Posttest Scores on the SCS for the Experimental Group

	Sum of Squares	df	Mean Squares	F	Sig.
Regression	324.914	1	321.914	2.934	.104
Residual	1993.286	18	110.738		
Total	2318.200	19			

The F value comparing SCS pretest and posttest scores was 2.943 with a p-value of .104. The F value for this comparison implies that there was no significant difference in SCS scores between the pretest scores and the posttest scores for the experimental group.

Figure 4.1 displays the regression line for this comparison. This table shows that as scores change on the pretest for the SCS, expected scores on the posttest increase. Figure 4.1 suggests a positive sloping line for this comparison. Scores on the SCS are expected to increase after treatment but not at a significant level.

Figure 4.1 Regression Expected Score by Observed Scores for the SCS



Statistical Outcomes for the GCQ-S

The second question for this study was: Are perceptions of cohesion changed after participation in a challenge course program? The GCQ-S was utilized to examine participant's feelings of cohesion prior to and after taking part in a challenge course program.

Pearson's Correlation Coefficient was used to examine the strength of the relationship between pretest scores and posttest scores on the GCQ-S. Table 4.9 displays the correlation between the pretest and posttest scores of the GCQ-S.

Table 4.9 Correlations of GCQ-S Scores for Pretest and Posttest of the Experimental Group

		PRESCSCTL	PERSCSTX
Pearson Correlation	GCQ-S Pre-test	1.00	
	GCQ-s Posttest	.443**	

The R describing the relationship between pretest and posttest scores for the GCQ-S of the experimental group was reported at .443 with a *p*-value of .025 which suggests that there was a significant relationship of scores between the two tests. The SMC presented in this case was .197; therefore about 20% of the total variability in pretest scores on the GCQ-S for the control group can be accounted for by scores on the pretest scores and posttest scores.

Significance of the effect that the challenge course experience had on participant's feelings of cohesion were measured by the F Test. Table 4.10 displays the results of the ANOVA for the comparison between pretest and posttest scores on the GCQ-S.

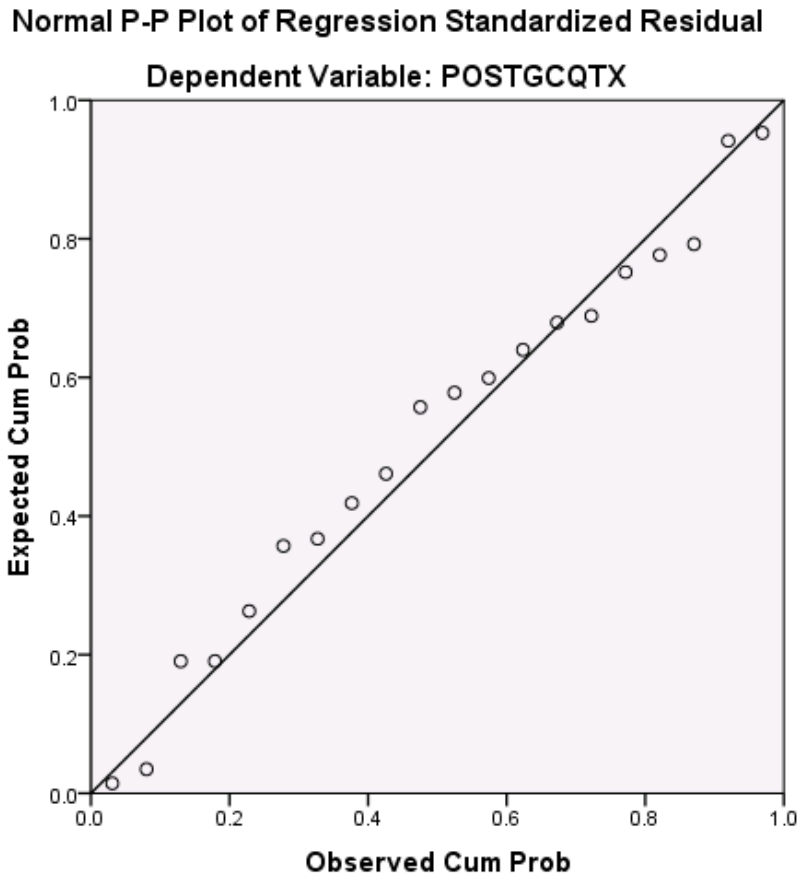
Table 4.10 ANOVA Table Comparing Pretest and Posttest Scores on the GCQ-S for the Experimental Group

	Sum of Squares	df	Mean Squares	F	Sig.
Regression	124.776	1	124.776	4.402	.050
Residual	510.174	18	110.738		
Total	634.650	19			

The F value for the comparison between the pretest and the posttest scores of the GCQ-S was 4.402 with a p-value of .050. The F value for this comparison implies that there was a significant difference in GCQ-S scores between the pretest scores and the posttest scores for the experimental group.

Figure 4.2 displays the regression line for this comparison. This table shows that as scores change on the pretest for the GCQ-S expected scores on the posttest increase. Figure 4.2 suggests a positive sloping line for this comparison, score on the GCQ-S increase after treatment.

Figure 4.2 Regression Expected Score by Observed Scores for the GCQ-S



Summary

Descriptive statistics for participants in the experimental group, suggested there was an increase of learned resourcefulness skills after participation in a challenge course program and a decrease of standard deviation between scores on the SCS. Further analysis suggests there was no significant increase in learned resourcefulness skill after

treatment. This was similar to the findings of the control group which indicated no difference of scores on the SCS between those who participated in the challenge course experience and those who did not.

Further examination of descriptive statistics for the experimental group suggests a increase in feelings of cohesion among group members with an increase of the standard deviation between scores on reported on the GCQ-S after participation in a challenge course experience. Further review of the data suggests that the increase of feelings of cohesion after taking part in a challenge course experience was significant (see table 4.1). Participation in a challenge course experience increased individual's perception of cohesion with others in the experimental group.

CHAPTER V

DISCUSSION

The focus of this study was to determine the effect if any that a challenge course experience could have on the development of learned resourcefulness skills and feelings of group cohesion for college students who were part of the student learning community CASNER FIT. Two research questions were explored during this study. The first question asked was; does a challenge course experience change for individuals participating in the CASNER FIT program's inventory of learned resourcefulness skills? The second question was; does a challenge course experience have an effect on a person who is participating in the CASNER FIT program feelings of cohesion with other members in the group?

Summary of Study

Participants who met the criteria for the study self-selected to participate in either the experimental group or the control group. Those who participated in the experimental group were asked to complete the SCS and the GCQ-S prior to participating in a challenge course program and again after completion of the program. Students in the control group were asked to complete the SCS and the GCQ-S during a CASNER FIT meeting and again during the following meeting two weeks later. For this study, 40

participants chose to participate. There were 20 students in the experimental group and 20 in the control group. This study utilized simple linear regression analysis from the IBM Statistical Package for the Social Sciences 20 (IBM SPSS 20) with a pre-determined alpha set at ($p < .05$) to evaluate the data. Simple liner regression was used because the study incorporated self-selected participants who were part of an intact group. The statistic utilizes a squared multiple correlation coefficient (SMC) which is an expression of the percent of variance in the dependent variable that can be accounted for by the independent variable and Analysis of Variance (ANOVA). which utilizes the Ominous F test to suggest significance of differences in scores in the dependent variable that are associated with the independent variable. In this study, simple linier regression was also utilized to plot the residual scores in relationship to expected scores suggesting trends of how the independent variable may affect the dependent variable.

Discussion of Findings

An intention of this study was to evaluate whether the development of resiliency skills could be affected by participating in a challenge course experience. The F test comparison (see table 4.5) of pretest and posttest scores of the SCS for the experimental group yielded a non-significant difference. This result is not consistent with the literature, specifically, McKenzie (2000) stated that outdoor recreation activities such as a challenge course experience have a positive impact on the development of self-awareness, self-efficacy, the ability to delay gratification, and positive self-talk which are skills measured by the SCS. The challenge course is a facilitated outdoor recreation program that offers groups and individuals opportunities to participate in a series of activities which involve mental, physical, and emotional risk taking (Rohnke, Tait & Wall, 1997). In this study,

when a challenge course participant reached a point of dissonance, the facilitator coached them in self-control skills which resulted in completion of tasks. Despite completing this challenge course process, participants of the experimental group's SCS scores did not significantly change as the literature suggested. However, because there was a contradiction between results of this study and implications from the literature, future research is recommended to further explore the relationship between a challenge course experience and the development of individual resiliency skills.

Although, the results determined no significant difference between the pretest and the posttest SCS scores, there was other evidence that the challenge course experience did have an effect on the development of resiliency skills. Analysis of the regression line suggested a positive relationship between pretest and posttest SCS scores (see figure 4.1). The positive regression line suggested that individual's posttest scores increased in relationship to their pretest scores which supports a need for further investigation of the effect of a challenge course experience on the development of resiliency skills.

Individual experiences of members of the experimental group also suggested a need for further research regarding the effect of a challenge course experience on the development of resiliency skills. For example, one member of the group sat for several minutes on the exit platform of the zip line nervously contemplating his decent. Committing to leave the zip line platform is an exercise developing the concept that current stress will be relieved in the near future. The challenge course facilitator coached this participant, asking him to focus his thoughts on the desired outcome, take deep breaths and to think confidently. Upon his successful zip to the ground the entire experimental group met him cheering his success, supporting a new sense of self,

knowing that he overcame his fear successfully.

The effect that a challenge course experience has on the development of cohesion was also investigated during this study by using the GCQ-S to measure individual's perceptions of cohesion. The results for this comparison yielded a significant difference with a p-value of .05 between pretest and posttest scores on the GCQ-S which suggested that difference in scores can be accounted for by the challenge course experience. Students who participated in this challenge course experience increased feelings of cohesion for each other over the course of the challenge course. These findings are consistent to results of other studies of the development of cohesion in a challenge course setting (Akey & Bobilya, 2002; Benshoff & Glass, 2002; and Griffin & Pennscott, 1991). Akey and Bobilya (2002), in their study suggested that a challenge course event developed student cohesion at an institution of higher education (IHE). A challenge course is a program that is designed to develop groups by providing them activities which involve mental, physical, and emotional risk taking (Rohnke, Tait & Wall, 1997). Placing groups in a challenging setting encourages them to develop an interdependent relationship that enhances cohesion and moves a group forward in development.

Members of the experimental group in this study were guided through a series of activities encouraging them to work together to solve problems as a team. The challenge course activities in this study were sequenced to become more challenging for the group as they progressed further through the experience. Early activities, such as Human Geography allowed group members to exchange individual information about themselves to others, encouraging the development of relationships. Later, the group was presented with problem solving initiatives which challenged those in the experimental group to

work together to develop and implement solutions. Finally, individuals in the experimental group traveled through the high elements which provided the group with physical challenges in stressful situations. Upon completion of each challenge course activity, facilitators guided the participants through a reflection period reinforcing aspects of the development of their group. Throughout periods of facilitation, participants in this study reported common themes of increasing trust with others, awareness of other's needs, developing a sense of learning how to support others in their group and a sense of cohesion. For example, when developing a full value contract with the experimental group, students discussed how they would like to be treated by others resulting in a short list of rules that the group would follow throughout the challenge course event. During this discussion all students in agreed to respect each other, to listen to all members of the group, to enjoy the company of all participants, and to provide assistance when asked. These identified outcomes of a full value contract help support the development of cohesion (Benshoff & Glass, 2002).

Further inspection of GCQ-S scores in this study supported findings of past research completed on the relationship between a challenge course experience and the development of cohesion. Correlations between pretest scores and posttest scores on the GCQ-S were both positive and significant suggesting that there was a positive relationship between testing periods. The SMC suggested that approximately 20% of the variance in the posttest scores was explained by pretest scores. Therefore, after participating in the challenge course activity 20% of the increase of individual's feelings of cohesion could be explained by the challenge course experience.

Control Group Comparisons

When comparing pretest and posttest scores of the control group for the SCS, the F test yielded a non-significant result (see table 4.3). This result suggested that no change had occurred for this group in the development of resiliency skills during the testing period. This outcome was expected for the control group in this study because these students did not participate in the challenge course experience.

Comparison of pretest and posttest scores for the control group for the GCQ-S, the F test yielded a non-significant result (see table 4.3). The F test result for this comparison suggested that no change had occurred for this group in the development of cohesion during the testing period. This outcome was expected for the control group in this study because these students did not participate in the challenge course experience.

Control Group Compared to the Experimental Group

When comparing pretest scores for SCS for the control group to the experimental group, the F test reviled that scores were not significant. A non-significant outcome for this comparison suggested that individuals who completed the SCS and participated in the experimental group or the control group are representative of the same population. For example, both the control group and the experimental group were sampled from the CASNER FIT program, they were freshman who lived in the same dormitory and studied in the School of Agriculture at Oklahoma State University. The F Test was used to compare posttest scores (see Figure 4.3), no significant difference was noted for a comparison of SCS scores between the control group and the experimental group. This posttest comparison validates findings of the experimental group. Students who did not participate in the challenge course experience made no significant changes in their

development of resiliency skills. As oppose to the experimental group who did take part in the challenge course experience (see table 4.11).

The students who participated in the control group completed the SCS prior to a CASNER FIT meeting and then again two weeks later. During that two week period students from the control group attended classes and lived their lives in the same dormitory as the students in the experimental group, yet they did not develop self-control skills. Control group students were not submitted to the same stressful situations or problem solving activities that the experimental group had been facilitated throughout the challenge course experience. As a result, there was no development in self-control skill development in the control group as seen in the experimental group.

When comparing pretest scores on the GCQ-S between the experimental group and the control group, the F value was not found to be significant which suggest homogeneity between the two groups. Individuals from the control group who participated in the study were found to be like those in the experimental group. When examining differences between posttest scores between the control group and the experimental group for the GCQ-S, the F test suggested no significant difference. This result validates the findings of the experimental group analysis for the GCQ-S. While a significant change was suggested for scores on the GCQ-S between pretest and posttest for the experimental group (see table 4.7), no difference was found in the control group (see Table 4.3). For GCQ-S posttest scores the F test suggested that students who took part in the challenge course experienced increased feelings of cohesion during the testing period.

Results of previous research focusing on IHE student's participation in a challenge course experience suggested that students who are involved in such an experience develop feelings of cohesion with others in their group (Akey & Bobilya, 2002). While participating in challenge course program, students are presented with opportunities to solve problems and to share thrills with others. Students who participated in the control group of this study were not exposed to the group problem solving activities or the stressful environment of a challenge course. Therefore by not participating in the challenge course experience during the period of this study, students did not develop a greater feeling of cohesion with their peers.

Conclusions

In conclusion, a challenge course experience proved to be a beneficial experience for Oklahoma State University students participating in the CASNER FIT program. While taking part in the study those in the experimental group were placed in situations where they interacted with other participants as a team to solve problems and were placed in situations with individual challenges. This challenge course program led students to a deeper understanding of themselves and aided in the development of closer relationships with other members of the experimental group. In the earlier example, a member of the group sat for several minutes high in the air sitting on the exit platform of the zip line nervously contemplating his decent. While being coached by a course facilitator, peers notice his reluctance and began to encourage him. Upon his successful zip to the ground the entire experimental group met him on the ground cheering his success. Smiling, giving one another high fives and making plans to do things with each other following the challenge course experience are evidence of the positive effects that the challenge

course experience had on these student (Halberstadt,1998). Throughout the challenge course experience it was common to see a student express a desire to quit, yet after a brief period of resiliency skills coaching and support form peers, students completed the tasks.

Statistical analyses also suggested that the challenge course experience had a beneficial effect on the experimental group. The significant difference noted for change of scores on the GCQ-S validated increased feelings of cohesion with peers during the challenge course experience. Similar to findings of Akey and Bobilya (2002) who reported that following a challenge course experience, students in their study felt greater levels of cohesion.

Although a significant change in SCS scores for the experimental group was not indicated by the F test, evidence produced during this study implies that the challenge course experience may have had a positive effect on those who participated. Data revealed that the regression line comparing participant's scores on the SCS of the experimental group to their predicted scores (see Figure 4.1) which suggested a positive relationship the between pretest and posttest. This finding indicates that further research on the relationship between a challenge course experience and the development of resiliency skills is warranted.

Implications for Higher Education

Attention given to student development in IHE is warranted. Completing a college degree benefits students as well was the IHE. The results of this sturdy suggest that challenge course programming can be utilized as tool for student development in IHE. Outdoor Recreation benefited Kurt Hahn for the development of student learning communities at Salem Schools which evolved into the Outward Bound School (Rohrs,

1970). The Outward Bound movement led to the development of challenge course programming (Breuninig, Cashel, Martin & Wagstaff, 2006). Hahn's educational philosophy has carried over to IHE through challenge course programming under the assumption that a challenge course environment is beneficial to student development.

Tinto (2002) stated that student learning communities add to student success and should be included in conversations regarding retention at IHE. College students who become involved in learning communities are able to combine social interactions with knowledge gained in classroom settings to create a significant learning experience (Kuh, 1996). Student learning communities add not only to the quality of the learning experience but also to success of students in IHE (Kuh and Zhao, 2004). The results of this study imply that groups can become cohesive through participation in a challenge course experience. Cohesion is said to be "the essence of relationships with in a group" it is the force that cause members to remain in the group over time (Burlingame, Fuhriman & Johnson, 2002). As IHE focus more attention to the development of student learning communities, challenge course programming can be viewed as a program that can productively set a group forward.

This study presented evidence that positive changes occurred in SCS score after students participated in the challenge course program. These results imply that a challenge course program is valuable as an aid to develop resiliency skills for students at IHE and is supportive of Keefer and Kennett's (2006) statement that skills such as self-awareness, self-efficacy, delay of immediate gratification, positive self-talk, and planning while stressed can be obtained later in a person's life. These traits coined by Rosenbaum (1989) have been found to aid in student success in IHE (Keefer & Kennett 2006).

Recommendations for Further Research

The first recommendation for future research focuses on sampling of participants. The F test in this study determined no significant difference between the pretest and the post test for the experimental group for SCS scores in this study yet means did increase (see table 4.1) and the regression line suggested a positive relationship between the two (see figure 4.1), further research examining the effect of a challenge course experience on SCS scores is recommended. In the case of this study, recruitment of participants was difficult. In order to participate in a challenge course experience a student must sacrifice eight hours of their time during the academic semester. This time commitment deters students form participation. Market in the potential outcomes of the experience and providing external incentive for participation in the experimental group could potentially increase the sample size and strengthen this study.

The second recommendation for future research is to use both the SCS and the GCQ-S to assess the development of resiliency skills and cohesion in IHE students from other schools using a more extensive delivery of outdoor recreation. Several IHE offer incoming students opportunities to participate in wilderness orientation programs. These programs are multiday events that provide overnight programming in a wilderness setting. Programming such as this is more extensive than a challenge course experience but still depends on the outcomes presented by McKenzie (20000). Collecting a random sample form the hundreds of students who participate in IHE wilderness orientation programs would strengthen the results indicated in this study.

The third recommendation for further research based on this study is to view IHE student participation in outdoor recreation activities as an independent variable while

other independent variable consist of participation in other activities such as intramural sports, open recreation, or those who engage in limited leisure activities then using SCS scores as the dependent variable. This study would allow researchers to further examine the effects of resiliency development through participation in outdoor recreation activities by making comparisons to students who choose different types of recreation activities. The format of this study takes advantage of a participant's previous leisure experience and decreases the time commitment required in the current study.

The fourth recommendation for further research allows for a more focused assessment of the results of the current study. The focus of this study was IHE student development, the fourth study proposed is to again asses pretest and posted changes on the SCS and the GCQ-S using a challenge course program as the treatment. After statistical analysis, researchers would follow the students whose test scores significantly increased through their college careers attempting to explore the effects of the experience on their retention in the IHE. This longitudinal study would attempt to provide a direct link between a challenge course experience and IHE retention.

The fifth recommendation for future research centers on motivation in IHE of student participation in a challenge course activity. Throughout the process of this study, student participation was challenging. Such an investigation may incorporate Deci and Ryan's (2006) Self Determination theory to attempt to explain IHE student participation in beneficial yet time consuming programming. This study could assist in the development of a model that could increase participation in challenge course programming in IHE.

Concluding Comments

There were several occurrences during this study, which provided the researcher with insight and a better understanding of IHE students. First is that the researcher must possess an understanding of basic motivational theory in order to attract participation in a novel experience such as a challenge course experience. An attempt to gain participation with internal motivators was unsuccessful. For example, marketing for participation by informing students of how this experience may add to their academic success attracted only two students out of a sampling population of about 200. External motivators however were successful; at gaining participation. When students were offered service credit or a t-shirt they were more likely to participate.

Second, students initially targeted for this study did not choose to participate, the reason for this may be due to a lack of developed inventory of resiliency skill or a lack of feelings of cohesion with others in their group. It is also likely that students may not participate in other activities that could benefit them that are offered on campus. Providing a challenge course activity to all incoming students would assist in their bonding with others as well as with the IHE. It will also aid in the development of the skills needed to recognize a need to participate in an activity that will benefit them in the long term. A challenge course program would insure that students develop skills needed to pursue other activities that will be beneficial to their IHE experience.

The results of this study support the general literature on the utilization of a challenge course activity to develop individual's skills which enhance resiliency as well as to develop cohesion with others. As in previous studies discussed through the literature the challenge course experience had a positive effect on IHE students in this study

development of resiliency skills and feelings of cohesion with other who had participated in this program. Like in relevant findings literature, those who participated in the treatment portion of this study are likely to be able to make plans during stressful conditions, delay immediate gratification, have a competent level of self-awareness, and have developed a cohesive relationship with other students form the CASNER FIT program. According to the literature those who participated in the challenge course experience in this study will have a successful IHE experience.

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APPENDICES

APPENDIX A

Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date:	Friday, October 12, 2012
IRB Application No	ED12162
Proposal Title:	Using a Challenge Course as a Tool for Retaining College Students: The Development of Student Learning Communities and Learned Resourcefulness
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 10/11/2013

Principal Investigator(s):

Scott Jordan
101 Colvin Center
Stillwater, OK 74078

Tyler Tapps
180 Colvin Center
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI, advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia M. Kennison

Shelia Kennison, Chair
Institutional Review Board

APPENDIX B

Institution Review Board Approval of Modification

Oklahoma State University Institutional Review Board

Date :	Thursday, October 24, 2012	Protocol Expires:	10/11/2013
IRB Application	ED12162		
Proposal Title:	The Influence of a Challenge Course Experience on Learned Resourcefulness and Cohesion Within a College Student Learning Community		
Reviewed and Processed as:	Exempt **Modification**		
Status Recommended by	**Approved**		

Principal Investigator(s) :

Scott Jordan
101 Colvin Center
Stillwater, OK 74078

Tyler Tapps
180 Colvin Center
Stillwater, OK 74078

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office MUST be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB

X The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

Signature : Shelia M. Kennison

Shelia Kennison, Chair,
OSU Institutional Review Board

Thursday, October 25, 2012
Date

APPENDIX C

Self-Control Scale (Rosenbaum, 1980)

Directions: In the blank provided for each question, indicate how characteristics or descriptive each of the following statements is of you by using the code below.

+3 very Characteristic of me (extremely descriptive)

+2 rather characteristic of me (quite descriptive)

+1 somewhat characteristic of me (slightly descriptive)

-1 somewhat uncharacteristic of me (slightly un-descriptive)

-2 rather uncharacteristic of me (quite un-descriptive)

-3 very uncharacteristic of me (extremely non-descriptive)

1. _____When I do a boring job, I think about less boring parts of the job and the reward that I will receive once I am finished.

2. _____When I have to do something that is anxiety arousing for me, I try to visualize how I will overcome my anxieties while doing it.

3. _____Often by changing my way of thinking I am able to change my feelings about almost everything.

4. _____I often find it difficult to overcome my feelings about almost everything.

5. _____When I am feeling depressed I try to think about pleasant events.

6. _____I cannot help thinking about mistakes I have made in the past.

7. _____When I am faced with a difficult problem, I try to approach its solutions in a systematic way.

8. _____I usually do my duties quicker when someone is pressuring me.

9. _____When I am faced with a difficult decision, I prefer to postpone making a decision even if all facts are at my disposal.

10. _____When I find that I have difficulties in concentrating on my reading, I look for ways to increase my concentration.

11. _____When I plan to work, I remove all the things that are not relevant to my work.

12. _____When I try to get rid of a bad habit, I first try to find out all of the factors that maintain this habit.

13. _____When an unpleasant thought is bothering me; I try to think about something pleasant.

14. _____If I would smoke two packages of cigarettes a day, I probably would need outside help to stop smoking.

15. _____When I am in a low mood, I try to act cheerful so my mood will change.

16. _____If I had the pills with me, I would take a tranquilizer whenever I felt tense and nervous.

17. _____When I am depressed, I try to keep myself busy with things that I like.

18. _____I tend to postpone unpleasant duties even if I could perform them eminently.

19. _____I need outside help to get rid of some of my bad habits.

20. _____When I find it difficult to settle down and do a difficult job, I look for ways to help me do my job.

21. _____Although it makes me feel bad, I cannot avoid thinking about all kinds of possible catastrophes in the future.

22. _____First of all I prefer to finish a job that I have to do and then start doing the things I really like.

23. _____When I feel pain in a certain part of my body, I try not to think about it.

24. _____My self-esteem increases once I am able to overcome a bad habit.

25. _____In order to overcome bad feelings, that accompany failure, I often tell myself that it is not so catastrophic and that I can do something about it.

26. _____When I feel that I am too impulsive, I tell myself "stop and think before you do anything.

27. _____Even when I and terribly angry at somebody. I consider my actions very carefully.

28. _____Facing the need to make a decision, I usually find out all the possible alternatives instead of deciding quickly and spontaneously.

29. _____Usually I do things first the things I really like to do even if there are more urgent things to do.

30. _____When I realize that I cannot help but be late for an important meeting, I tell myself to keep calm.

31. _____When I feel pain in my body, I try to divert thoughts form it.

32. _____I usually plan my work when faced with a number of things to do.

33. _____When I am short of money, I decide to record all of my expenses in order to plan more carefully for the future.

34. _____If I find it difficult to concentrate on a certain job, I divide the job into smaller segments.

35. _____Quite often I cannot overcome unpleasant thoughts that bother me.

36. _____Once I am hungry and unable to eat, I try to divert my thoughts away from my stomach or try to imagine that I am satisfied.

APPENDIX D

Group Climate Questionnaire – Short Form (MacKenzie, 1983)

For each Item 1 through12, circle the number 1 through 6 according your perception with 1 being "not at all" like this group and 6 being "extremely" like this group. Please provide your response to each question leaving none blank.

1. The members liked and cared about each other.

   1 2 3 4 5 6

   not at all extremely

2. The members tried to understand why they do the things they do and tried to reason it out.

   1 2 3 4 5 6

   not at all extremely

3. The Members avoided looking at important issues going on between themselves.

   1 2 3 4 5 6

   not at all extremely

4. The members felt what was happening was important and there was a sense or participation.

   1 2 3 4 5 6

   not at all extremely

5. The Members depended on the group leader(s) for direction.

   1 2 3 4 5 6

   not at all extremely

6. There was friction and anger between the members.

   1 2 3 4 5 6

   not at all extremely

7. The members were distant and withdrawn from each other.

1 2 3 4 5 6

not at all extremely

8. The members challenged and confronted each other in their efforts to sort things out.

1 2 3 4 5 6

not at all extremely

9. The members appeared to do things the way they thought would be acceptable for the group.

1 2 3 4 5 6

not at all extremely

10. The members distrusted and rejected each other.

1 2 3 4 5 6

not at all extremely

11. The members revealed sensitive personal information or feelings.

1 2 3 4 5 6

not at all extremely

12. The members appeared tense and anxious.

1 2 3 4 5 6

not at all extremely

APPENDIX E

Challenge Course Day Time Line

Day One:

7:00 pm Challenge course and study orientation

7:15 – 8:00pm Group warm-up activities

Day 2:

7:00- 9:00 pm Group and individual development activities: Full value contract, initiatives, low elements

Day 3:

1:00 – 2:00pm High Challenge course safety training

2:00 – 4:30pm High challenge course

4:30 – 5:15pm Post-test period

APPENDEIX F

Information This About Study

Project Title: Using a Challenge Course as a Tool for Retaining College Students: The Development of Student Learning Communities and Learned Resourcefulness

Investigators: Scott Jordan MS, (Primary Investigator) Dr. Tyler Tapps (Study Advisor)

Purpose: The purpose of this study is to examine participation in a challenge course program's effect on personal Learned Resourcefulness skills and can this experience enhance the perception of membership to a learning community.

Procedures: As a participant in this study, you will be asked to complete the Self Control Scale, the Group Environment Questionnaire – Short, and a demographics form prior to a full day facilitated challenge course experience. This experience will include a period of warm-up activities, team initiatives and low elements in the morning, followed by and experience on high challenge course elements in the afternoon. Following your challenge course experience you will be asked again to complete the two scales.

Risks of Participation:

The challenge course will necessarily involve participation in activities which are, by nature, physically demanding and will subject you to stress, anxiety, and possible perceived hazards, not all of which can be foreseen. It is understood that the applicant will be climbing and walking on cables, logs, ladders, walls and beams; at times, fifty feet above the ground. Participants will be lead through this experience by currently trained facilitators and state of the art equipment will be used to maintain a safe experience.

Benefits: The results of this study may be beneficial to better understand the relationships between Learned Resourcefulness skills, learning communities, a challenge course experience, and college student retention.

Confidentiality:

You are not asked to provide assigned copy of this form so that no names are collected from you, thereby reducing your risk in participation. Please keep a copy. Your responses to both short surveys are confidential. No names of other identifying information will be attached to your packet; only aggregate data will be reported. The data will be securely stored in a locked file cabinet in one of the researcher's offices. The paper copies will be destroyed one year after the completion of this study. Only the researchers will have access to the information which is store electronically with any identifying information and it will be destroyed five years from completion of the study.

Contacts: Please feel free to contact the researchers at Oklahoma State University (Stillwater, OK 74078) if you have questions or concerns about this research project.

Scott Jordan, 101 Colvin Recreation Center, (405) 744-5583; scott.jordan@oksatate.edu

Tyler Tapps, 183 Colvin Recreation Center, (405)744- 5499; tyler.tapps@okstate.edu

For more information on participants' rights, contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, (405)744-3377 or irb@okstste.edu

APPENDIX G

Participant Information

1. Study ID Number _____
2. Gender: Male / Female
3. Classification: Freshman (1st year) / Freshman / Sophomore / Junior / Senior/ Other
4. Race: _____
5. High School GPA: _____
6. Home Town: _____
7. First Generation Student: Yes / No (Did either of your parents complete a college degree?)
8. I fell that I will stay and complete a degree at Oklahoma State University.

1	2	3	4	5	6
Strongly disagree					Strongly agree

A follow-up phone interview may be conducted to clarify results. If you would be willing to participate in a phone interview please write your first name (or a code name that you will know) and a telephone number at which you can be reached.

(CODE) NAME _____ PHONE _____

VITA

Scott Howard Jordan

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE INFLUENCE OF A CHALLENGE COURSE EXPERIENCE ON LEARNED RESOURCEFULNESS AND COHESION WITHIN A COLLEGE STUDENT LEARNING COMMUNITY

Major Field: Health, Leisure, and Human Performance: Option in Leisure Studies

Biographical:

Education: Graduated from Stillwater High School, Stillwater Oklahoma in May 1981; Received a Bachelor of Science degree in Human Geography form Oklahoma State University, Stillwater, OK, December 1986; Received a Master's of Science degree, with a major in Leisure Studies form Oklahoma State University, Stillwater, OK, July 2001; Completed requirements for the Doctorate of Philosophy with a major in Health, Leisure, and Human Performance in July 2013.

Experience: Coordinator, Oklahoma State University Outdoor Adventure Program, Stillwater, OK, 2001- Current; Graduate Assistant, Oklahoma State University Outdoor Adventure, Stillwater, OK, 1999 – 2001; Youth and Family Counselor, Payne County youth and Family, Stillwater, OK, 1995 – 1999; Family Focus Counselor, Red Rock Mental Health, Oklahoma City, OK, 1993 – 1995.

Professional Memberships: Wilderness education Association, Association of Outdoor Recreation and Education, Association of Challenge Course Technology, Professional Ropes Course Association, Rho Phi Lambda, Phi Kappa Phi.

Name: Scott Jordan Date of Degree: July, 2013

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: THE INFLUENCE OF A CHALLENGE COURSE EXPERIENCE ON LEARNED RESOURCEFULNESS AND COHESION WITHIN A COLLEGE STUDENT LEARNING COMMUNITY

Pages in Study: 88 Candidate for the Degree of Doctor of Philosophy

Major Field: Health, Leisure, and Human Performance

Scope and Method of Study: The Purpose of this study was to determine the effect of a challenge course experience on the development of learned remorsefulness skills and cohesion with in a college student learning community. The study describes weather or not a challenge course program for CASNER FIT on the Oklahoma state University campus changed levels of learned resourcefulness of cohesion in participants. Participants in the study included 40 self-selected CASNER FIT students. Half of the students chose to participate in the experimental group and the other 20 students participated in the control group. Participants in both groups completed the Self Control Scale (SCS), the Group Climate Questionnaire Short form (GCQ-S), and a participant information form. After completion of a challenge course program, the experimental group again completed the SCS and the GCQ-S. The Control group completed the posttest questionnaires (SCS and GCQ-S) two weeks later during a CARNER FIT meeting.

Findings and Conclusions: Simple Linier Regression was used to analyses the data in this study which produces an F test assessing the significance of change during the testing period, as well as correlations, a Standard Multiple Correlation and a regression line. The findings for this study for the SCS suggested that there was no difference between pretest and posttest scores indicating that the challenge course experience did not change resiliency skills. The regression line produced for this comparison indicated a positive relationship between observed scores and predicted scores which gives reason for further research of the effect of a challenge program on learned resourcefulness. Analysis of the pretest and posttest scores for the GCQ-S yielded a significant F test score. The results suggested that the challenge course experience did have an effect on increasing cohesion on the experimental group. These findings can assist Institutions of higher education develop student learning communities.

ADVISER'S APPROVAL: Tyler Tapps PhD