Abstracts from the
Coalition for Education in the Outdoors Eleventh Biennial Research Symposium

Held at

RADFORD WOODS

Indiana University's Outdoor Center
Martinsville, Indiana
January 13-15, 2012

Compiled by

Karen Paisley, University of Utah
Anderson B. Young, SUNY Cortland
Raena Blumenthal, SUNY Cortland

Coalition for Education in the Outdoors
State University of New York at Cortland
P.O. Box 2000
Cortland, New York 13045

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Preface

The Coalition for Education in the Outdoors (CEO) is a network of organizations, businesses, institutions, centers, agencies, and associations linked and communicating in support of the broad purpose of education in, for, and about the outdoors. The Coalition was established in 1987 at the State University of New York at Cortland by a group of outdoor educators from around the country.

The purpose of the Coalition is to identify the networking and information needs of its affiliates and the field of outdoor education and, insofar as is financially practical, to meet those needs. Through its publication *Taproot*, CEO presents a broad view of education in the outdoors and a means for outdoor educators to stay abreast of developments in the field, especially those outside their primary interest area. In this way, CEO does not duplicate the work of other organizations, but provides readers with access to that work.

The founders of CEO envisioned that it could play an important role in addressing the research needs of the field. In its early years, CEO formed a research committee, which led to the organization of these biennial research symposia and the refereed publication now known as *Research in Outdoor Education.* Indiana University's Bradford Woods was chosen as the site of the first symposium, held in 1992 and coordinated by Camille Bunting of Texas A&M. Things worked out so well at Bradford Woods that CEO's Research Committee abandoned the idea of rotating the location. The CEO-Bradford Woods partnership in this venture is an excellent example of what CEO's founders envisioned.

Twenty years later, the CEO Research Symposium has more than doubled in attendance and tripled in the number of papers presented. Fortunately, the event is still not too large, and it has retained the informal and highly interactive atmosphere that people valued from the start. The purpose has remained the same.

The aim of the CEO Biennial Research Symposium is to assist outdoor educators in advancing the philosophical, theoretical, and empirical bases of outdoor education. It does so in several ways. First, the symposium enables scholars to present their work to one another and, through this book of abstracts and *Research in Outdoor Education*, to others in the field. Second, the symposium fosters conversation and builds a sense of community among researchers in outdoor education. Third, the symposium provides a forum to address areas of new or ongoing concern to researchers and scholars in outdoor education.

Papers selected for this and previous CEO symposia went through a blind-peer review. We can thank the reviewers for providing that service, which included giving feedback to authors, a step that enhances the already high quality of abstracts included in this compilation and presented at the symposium.

Following this symposium, authors of these abstracts will have the opportunity to prepare and submit full papers for yet another blind review process. Through that process, papers will be selected for inclusion in upcoming volumes of *Research in Outdoor Education.*

We owe thanks to many people who make this event possible. The reviewers, the CEO Research Committee, and the authors, all listed later, are the ones who bring this program to life. Shay Dawson and his staff at Bradford Woods make getting there and being there so comfortable. Special thanks go to Tim Street, whose work with this event began months before our arrival. Bradford Woods is an extension of the Department of Recreation, Park, and Tourism Studies at Indiana University. We thank that department and its chair, Bryan McCormick, for their continued support of Bradford Woods and the CEO Research Symposium. They generously host our evening socials. Human Kinetics Publishers and Sagamore Publishing have donated books that some lucky attendees take home with them. We thank both publishers for their contributions to our event. Finally, our thanks go to SUNY Cortland President, Erik Bitterbaum, and Provost, Mark Prus, for their continued support of the Coalition for Education in the Outdoors and to Charles Yaple, who keeps it going.

<div align="right">

Anderson Young
For the CEO Research Committee

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Reviewers for the Coalition for Education in the Outdoors Eleventh Biennial Research Symposium

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University of New Hampshire

Leo H. McAvoy
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Anderson B. Young
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*Emeritus committee members

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Coalition for Education in the Outdoors

Eleventh Biennial Research Symposium at

Indiana University's Outdoor Center

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Schedule of Events

2:00 **Check-in at Bradford Woods –** *Bradford Manor*

> *Note: Shuttle service is available between the residence areas (Bradford Manor, Agape Lodge, and Baxter Village Cabins) and the meeting and dining areas (Carr Center and Baxter Dining Hall).*

4:30 **Opening Session –** *Carr Center*

Words of welcome	Andy Young, CEO Research Committee
	Bryan McCormick, Indiana University
	Shay Dawson, Bradford Woods
Logistics	Tim Street, Bradford Woods
Symposium Overview	Andy Young

5:00 **Getting Acquainted** - Facilitated by Brock University delegation

5:45 **Dinner –** *Baxter Dining Hall*

6:50 **Issues and Challenges in Our Field –** *Carr Center*
Featured Speaker: Peg Smith, Chief Executive Officer, American Camp Association

7:15 **Issues and Challenges: Setting Our Agendas at CEO –** *Carr Center*
Facilitators: Sharon Todd, SUNY Cortland, and the CEO Research Committee

7:30 **Preview of Research: Themes and Highlights –** *Carr Center*
Karen Paisley, University of Utah, CEO Research Committee

7:45 **Research Presentation Session I –** *Carr Center*
Presider: Kendra Liddicoat, Cornell University

Each research presentation session features several papers and ample time for discussion. These sessions, like the entire symposium, are intended to be highly constructive and interactive. Each presenter is allotted 20 minutes and asked to reserve about 5 minutes for discussion. The schedule permits additional discussion of the papers and their implications before adjournment.

7:50 Motive identification and fluidity in adventure recreation
> Alan Ewert, Indiana University, Ken Gilbertson, University of Minnesota-Duluth, & Yuan Chun Luo, Indiana University

8:20 Developing lifelong learners: Enhancing dispositional enjoyment of learning through optimal engagement in adventure education programs
> Jim Sibthorp, Rachel Collins, Karen Paisley, Kevin Rathunde, & Scott Schumann, University of Utah; John Gookin & Sheila Baynes, National Outdoor Leadership School

8:40 General Discussion

8:45   Poster Session and Evening Social – *Baxter Dining Hall*

Measurement of challenge (stress) type and intensity in wilderness education students
    John Gookin, National Outdoor Leadership School; Jim Sibthorp & Karen Paisley, University of Utah
Outdoor Situational Fear Inventory subjectively revisited
    Whitney Ward & Joel Agate, Southern Illinois University
Moving beyond an environmental education model: Educating for sustainable development
    James Farmer, Earlham College
Parents and camps: Questions and concerns
    Karla Henderson, North Carolina State University; M. Deborah Bialeschki, American Camp Association;
    Kelly McFadden, NCSU
The effects of carbon footprint calculation on student trip leaders: A pilot study
    Lee Collette & Keith Crawford, Appalachian State University
The communal nature of outdoor orientation programs: An exploratory study
    Brent Bell & Steve Javorski, University of New Hampshire
The impact of international education abroad ASU SOLE expeditions on greening behaviors
    Diane M. Waryold, Appalachian State University
A survey of outdoor educators' use of student writing
    John Bennion and Stacy Taniguchi, Brigham Young University; Mat Duerden, Department of Recreation, Park
    and Tourism Sciences, Texas A&M University.
When practice and research come together to form an outdoor partnership
    Joy James, Lisa Gross, & Jennifer C. Geib, Appalachian State University
Activity-specific self-efficacy and general self-efficacy in outdoor programming
    Katherine Sharp & Jeffrey Turner, Georgia College & State University
Assessing the relationship between participant risk-taking through adventure recreation and propensity for
risk-taking in everyday life
    Jay Whitacre, Indiana University
Perceptions of social support for therapeutic wilderness program instructors
    Liz Kirk & Tim O'Connell, Brock University
The influence of wilderness leadership training courses on self-perception and locus of control
    Rose I. Gochenaur, Georgia Gwinnett College; Katharine A. Pawelko & Michael L. McGowan, Western Illinois
    University
An exploratory study of learning outcomes from an undergraduate wilderness camping and outdoor
leadership experience
    Patrick J. Holladay & Sydney L. Sklar, University of St. Francis

Saturday, January 14, 2012

7:30   Breakfast – *Baxter Dining Hall*

8:25   Research Presentation Session II – *Carr Center*
        Presider: Susan Houge Mackenzie, University of Idaho

        8:30   Awe as a catalyst for enhanced outdoor learning
                    Joel Agate & Whitney Ward, Southern Illinois University
        8:50   A study of the perceived significant life effect of a university outdoor education course
                    Jennifer Wigglesworth & Paul Heintzman, University of Ottawa
        9:10   The social climate in outdoor adventure education: A context for understanding adolescents' social
                 motivation
                    Benjamin J. Mirkin, University of New Hampshire
        9:30   Constraints and facilitators to sense of community: A qualitative exploration of participant trip
                 journals during organized outdoor group experiences
                    Garrett Hutson, Lynn Anderson, Mary Breunig, Sharon Todd, Tim O'Connell, & Anderson Young,
                    Alternately of Brock University and SUNY Cortland
        9:50   General Discussion

10:00   Refreshment Break

10:20   **Research Presentation Session III** – *Carr Center*
Presider: Drew Cavin, Young Harris College

10:25   Listen up! Implications for outdoor programs from a national poll of teens' environmental attitudes
    M. Deborah Bialeschki, American Camp Association; Jim Sibthorp, University of Utah; & Brigitte
    Griswold, The Nature Conservancy
10:45   Memories of environmental education: What functions do they serve?
    Kendra Liddicoat & Marianne Krasny, Cornell University
11:05   Connection with nature: The effects of organized camp experiences on children's environmental attitudes
    Margaret Ann Garner & Cheryl A. Stevens, East Carolina University
11:25   Understanding the contribution of wilderness based educational experiences to the creation of an
environmental ethic in youth
    Trever Waage and Karen Paisley, University of Utah; John Gookin, National Outdoor Leadership
    School
11:45   General Discussion

12:00   **Lunch and Free Time** – *Baxter Dining Hall*

1:15   **Research Presentation Session IV** – *Carr Center*
Presider: Ken Gilbertson, University of Minnesota, Duluth

1:20   Evaluation of the Shunda Creek substance use treatment program
    Keith C Russell, Western Washington University, & Lee Gillis, Georgia College
1:40   Intended Transference of learning: An investigation of the Outward Bound wilderness experience
    Andrew J. Bobilya, Ken Kalisch & Brad Daniel, Montreat College; Evan Coulson, Southern Illinois
    University
2:00   Energy demands of wilderness education students
    Cara Ocobock, Washington University, & John Gookin, National Outdoor Leadership School
2:20   The development and validation of a new assessment scale: Measuring the effectiveness of the Leave No
Trace PEAK Program
    Jennifer Miller & Amy Shellman, SUNY Cortland; Eddie Hill, Old Dominion University
2:40   The benefits and effects of women-specific outdoor programming
    Kaia E. Pirazzini, Southern Illinois University
3:00   General Discussion

3:05   **Refreshment Break** – Baxter *Dining Hall*

3:15   **Breakout Group Discussions on Issues and Challenges in Outdoor Education** – *Baxter Dining Hall and TBA*

4:45   **Research Presentation Session V** – *Carr Center*
Presider: Amy Shellman, State University of New York at Cortland

4:50   The importance of program quality in youth development: Program quality indicators as predictors of
outcome achievement among NOLS participants
    Rachel H. Collins & Jim Sibthorp, University of Utah; John Gookin, National Outdoor Leadership
    School
5:10   Choosing the right glue: Investigating the effect of adventure-based activities on the relationship
between fathers and sons
    Curt Davidson & Alan Ewert, Indiana University
5:30   The effects of a mentoring program on adolescents' self-regulation skills at summer camp
    Cass Morgan, Jim Sibthorp, & Monica Tsethlikai, University of Utah
5:50   Just keep swimming: Developing resilience through outdoor adventure
    Jill Overholt & Alan Ewert, Indiana University
6:10   General Discussion

6:30   **Dinner** – *Baxter Dining Hall*

7:45   Evening Forum – *Carr Center*

>Brief highlights of afternoon breakout discussion groups
>About *Research in Outdoor Education, Volume 11*
>Symposium summary and evaluation – CEO Research Committee

9:00   Social – *Baxter Dining Hall*

>*Socials sponsored by the Indiana University Department of Recreation, Park, and Tourism Studies*

Sunday, January 15, 2012

5:00   Breakfast (Continental breakfast available from 5 - 8 a.m.) – *Baxter Dining Hall*

Bloomington Shuttle to the Indianapolis airport picks up passengers at Bradford Manor. The shuttle will stop at Bradford Manor only at 5:40, 7:40 and 9:40 a.m., getting you to the airport by 6:30, 8:30 or 10:30 a.m. The shuttle stopping at 9:40 is the last of the day to make this special pick up. Be sure to catch it or have other firm arrangements.

Thank you for being here. See you in 2014.
Travel safely.

Motive Identification and Fluidity in Adventure Recreation
Alan Ewert, Indiana University
Ken Gilbertson, University of Minnesota – Duluth
Yuan Chun Luo, Buddhist Tzu Chi Education Foundation

Introduction

Numerous works have examined the motivations underlying the reasons for participating in adventure-based activities. These have included instinctual drive (Noyce, 1958), arousal seeking (Berlyne, 1960), flow experiences (Csikszentmihalyi, 1990; Fave, Bassi, & Massimini, 2003), sensation-seeking (Slanger & Rudestam, 1997), a sense of freedom (Kiewa, 2002), chaos and uncertainty (i.e., developing a sense of control) (Lyng, 1990), choreographic image-making (Holyfield & Fine, 1997), and normative influences (Celsi, Rose & Leigh, 1993).

Beyond simply taking a risk, however, a growing body of research suggests that other variables such as level of experience, skill, gender, and type of activity may play important roles in influencing the motivations for participation in adventure-based experiences (Creyer, Ross, & Evers, 2003; Todd, Anderson, Young, & Anderson, 2002). In addition, very little is known regarding the stability of these motivations over time. That is, from an aggregated perspective do motivations for participation change over a period of years? This study examined the reported motivations for participants engaged in a variety of adventure-based activities. In addition, participants were categorized according to level of skill (beginner, intermediate, advanced, and expert). The theoretical foundation for this work was based on the Specialization Model first proposed by Bryant (1979) and further specified in through the Adventure Model (Ewert & Hollenhorst, 1989). The Adventure Model posits that specific motivations and subsequent sought out activities and behaviors are mediated by personal skill, gender, experience level, and activity. This is an important consideration as these specific activities are often viewed as somewhat similar in nature by both the public and resource managers despite the fact that motives for participation may differ. In addition, gender was considered an important variable of study (e.g., Estes & Ewert, 1988; Thapa, Confer, & Mendelson, 2004). In this study, the sample frame drew from participants of rock climbing, sea kayaking, canoeing, and white-water kayaking. These specific activities were selected as they represent a relatively broad spectrum of adventure-based experiences. The following research questions were used to guide this study:

RQ1: What is the underlying motivation structure of participants who engage in adventure recreation? Does this structure vary by activity type?
RQ2: Do motivations vary as a result of levels of experience, activity type, and gender?
RQ3: Is the motive structure identified in RQ1 relatively stable over the years that the study was conducted?

Methods

Data were collected at the beginning during the summers 2000, 2002, 2003, 2006, 2007, and 2008, using a modified version of Ewert and Hollenhorst's (1989) adventure questionnaire. In addition to demographic and experience variables, responses to 24 items relating to motives for participation (e.g., *I rock climb for the exhilaration*) were measured on a 5 point Likert scale ranging from *not at all important* to *very important*. Course levels ranged from beginner, introductory, intermediate, advanced, and instructor courses. Course length ranged from three-hour introductory courses, to multi-day (3-7 days) instructor level courses and resulted in a

diverse participant sample with respect to experience level. To determine the underlying motivational structure, the 24-items measuring motives for participation were subject to Principal Component Analysis (PCA). After the factor structure was determined, multivariate analysis of variance was conducted to assess differences between factors across experience level, activity type, and gender. In addition, several logistical regression analyses were conducted to further understand the effects of gender, skill level, and activity choice on different motivation factors. Experience levels were calculated as a composite score of the following six self-report measures: 1) *frequency of participation*; 2) *years involved in an activity*; 3) *number of places visited in pursuit of the activity*; 4) *level of difficulty*, 5) *breadth of experience*, and 6) *level of perceived skill*. Responses to these six experience measures were converted to standardized z-scores (mean = 0, SD = 1) for each subscale. A composite score, *Total Experience,* calculated by summing individual z-scores was used to divide the sample four experience groups.

Findings

The sample consisted of 930 participants (non-students from throughout the U.S.), representing 365 (39.2%) females and 541 (58.2%) males, 13->55 years of age (mean age = 28.3, SD=11.4), enrolled in a variety of courses offered by a university in the upper Midwest. Adventure activities included rock climbing (N = 145) canoeing (N = 169), whitewater kayaking (N = 238), and sea kayaking (N=378). Data screening resulted in four questionnaires being eliminated from further analysis. A principle component analysis with Varimax was conducted to determine the underlying factor structure of the motivation instrument. As the result, a five-factor solution was determined with 64.4% of the total variance explained. The five factors were identified as *Self-Confidence, Sensation-Seeking, Self-Image, Social,* and *Escape.* Factor analyses on the specific activities (e.g., rock climbing, sea kayaking, etc.) yielded similar solutions. Logistic regression modeling was used to understand the effects of gender, skill level and activity choice on different motivation factors. The results suggested that: females have higher levels of motivation for social and lower level of motivation for sensation seeking than males. Participants with higher levels of motivation for sensation seeking were more likely to choose rock climbing over water activities (i.e. canoeing, whitewater, and sea kayaking). Participants with higher social motivations were more likely to choose canoeing over rock climbing, and rock climbing over sea kayaking. Participants with higher motivations for escape were more likely to choose water activities over rock climbing. Participants with higher skill levels were more likely to have higher social motivations, but lower levels of motivation for escape. Finally, the Factors of self-confidence and social significantly increased from 2000 to 2008.

Discussion

In what ways does this study inform our understanding of motivation and adventure recreation? First, results of the factor analysis suggest five organizing factors: Self-Confidence, Sensation-Seeking, Self-Image, Social, and Escape. The current study also suggests that experience level, gender, activity type can moderate the motives adventure participants. Or, perhaps it is the other way around. What we do not know at this point is whether motives begat activity or the type of experience and activity engaged influences the self-reported motives for participation.

This study also adds to our understanding by providing some initial insight into whether motives are stable within the general adventure-based population. The data suggest that while sensation-seeking stayed static, self-image dropped, and self-confidence, social, and escape

increased in importance. It may be that as societal mores and normative behaviors changes, the underlying motives for participating in adventure recreation will also exhibit some fluidity.

References

Berlyne, D. E. (1960). *Conflict, arousal and curiosity.* McGraw Hill, New York.

Bryan, H. (1979). *Conflict in the great outdoors.* Bureau of Public Administration, Sociological Studies No. 4. University, AL: University of Alabama.

Celsi, R. L., Rose, R. L., & Leigh, T. W. (1993). An exploration of high-risk leisure consumption through skydiving. *Journal of Consumer Research, 20,* 1-21.

Creyer, E.H., Ross, W.T., & Evers, D. (2003). Risky recreation: An exploration of factors influencing the likelihood of participation and the effects of experience. *Leisure Studies, 22,* 239-253.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: Harper.

Estes, C., & Ewert, A. (1988). Enhancing mixed-gender programming: Considerations for experiential educators. *The Bradford Papers Annual, 3,* 34-43.

Ewert, A., & Hollenhorst, S. (1989). Testing the adventure model: Empirical support for a model of risk recreation participation. *Journal of Leisure Research, 21,* 124-139.

Fave, A. D., Bassi, M., & Massimini, F. (2003). Quality of experience and risk perception in high-altitude rock climbing. *Journal of Applied Sport Psychology, 15*, 82-98.

Holyfield, L., & Fine, G. A. (1997). Adventure as character work: The collective taming of fear. *Symbolic Interaction, 20,* 343-363.

Kiewa, J. (2002). Traditional climbing: Metaphor of resistance or metanarrative of oppression? *Leisure Studies, 21*, 145-161.

Lyng, S. (1990). Edgework: A social psychological analysis of voluntary risk taking. *The American Journal of Sociology, 95,* 851-886.

Noyce, W. (1958). *The springs of adventure*. New York: The World Publishing Company.

Slanger, E., Rudestam, K. E. (1997). Motivation and disinhibition in high risk sports: Sensation seeking and self-efficacy. *Journal of Research in Personality, 31,* 355-374.

Thapa, B., Confer, J. J., & Mendelson, J. (2004). *Trip motivations among water-based Recreationists*. Retrieved February 2, 2008, from http://www.metla.fi/julkaisut/workingpapers/2004/mwp002-30.pdf

Todd, S. L., Anderson, L., Young, A., & Anderson, D. (2002). The relationship of motivation factors to level of development in outdoor adventure recreationists. *Research in Outdoor Education, Vol. 6,* 124-138.

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Developing Lifelong Learners: Enhancing Dispositional Enjoyment of Learning Through Optimal Engagement in Adventure Education Programs

Jim Sibthorp, Rachel Collins, Karen Paisley, Kevin Rathunde, & Scott Schumann
The University of Utah
John Gookin & Sheila Baynes
The National Outdoor Leadership School

As youth and college-aged student begin to undertake adult roles, they confront a complex world that demands greater self-direction and independence in all aspects of life (Tanner, Arnett & Leis, 2008). In order to effectively navigate the transition from dependence and supervision to the personal responsibility and independence that traditionally characterizes the transition from youth to adulthood, college-aged students need to become adept at self-directing their own learning, growth, and development. Youth and college students who enjoy learning are more likely to become lifelong learners, or those who self-direct, or self-regulate their own life paths and educational endeavors in ways that keep them both highly engaged and highly productive. However, we know very little about how to foster self-directed or lifelong learners.

John Dewey draws a distinction between experiences that are goal-relevant and experiences that are enjoyable and categorizes learning experiences into four quadrants: enjoyable and goal-relevant (termed "optimally engaging"); neither enjoyable or goal relevant (termed "disinterest"); relevant but not enjoyable (termed "drudgery"); or enjoyable but not relevant (termed "fooling"). Dewey (1910/1991) posits that the combination of enjoyment and goal relevance "defines the ideal mental condition" (p. 218). While this combination of intrinsic motivation and goal relevance is uncommon in school and unstructured leisure time, it is prevalent in structured voluntary activities, such as hobbies and sports (Csikszentmihalyi & Larson, 1984; Larson, 2000). More recently, this combinatory mode in recreational, educational, and work-related experiences has been linked to lifelong learning and continued human development (Rathunde, 2009). Assuming this link exists, and that structured recreation programs are well-suited to affording these experiences, then such programs may foster a propensity for lifelong learning.

Lifelong learners often show the ability to directly influence or regulate their work and leisure experiences in ways that are both goal-relevant and enjoyable. "Contexts that promote more frequent experiences of interest and flow are the same type of contexts that support –over the long term –the development of experiential wisdom" (Rathunde, 2009, p. 92). Experiential wisdom is a term Rathunde uses to describe the nuanced regulation that allows a person to plan for and adjust situations in ways that provide both personally enjoyable and goal-relevant experiences. Such experiences are optimal in the sense that they maximize both momentary engagement (Rathunde, 2009), motivation for future engagement (Sansone, 2009), and, potentially, an orientation toward lifelong learning. Given the recent work on lifelong learners (Rathunde, 2009) and the frequency of optimally engaging experiences in structured leisure time (Larson, 2000), adventure education appears well-suited to provide experiences that may positively influence future learning. Therefore, the primary purpose of this study was to determine the effects of a semester-long adventure education program on both optimal engagement and orientation toward lifelong learning.

Methods

During the spring of 2010, a convenience sample of National Outdoor Leadership School (NOLS) semester students were invited to participate in this study. They were the 47 college-aged students (18-29 years of age, M $_{age}$ = 20.6 years) enrolled in three semester-long adventure education courses at NOLS during the summer of 2010. Summer semesters were specifically targeted to access students who were in college before their NOLS semester (82% were enrolled in college during the spring semester) and afterwards (75% were enrolled in college during the fall semester). The study relied on a modified version of the Experience Sampling Method (Csikszentmihalyi & Larson, 1987), where participants were asked to complete experience sampling forms (ESFs) pertaining to 2 randomly assigned hour-long blocks each day over 4 separate week-long periods (one before, one after, and two during their courses). In addition, each student completed a dispositional measure of enjoyment and value of learning to address any possible shifts in orientation toward lifelong learning.

The situational measures, or ESFs, included basic activity reporting, information on group size, and measures of enjoyment and goal-relevance from two subscales of the Intrinsic Motivation Inventory (IMI; McAuley et al., 1987). Specifically, the Interest/Enjoyment and Value/Usefulness subscales were adapted for this study. Participants were prompted twice daily, either by the research team via email or by the semester course proctor, to complete the ESF pertaining to a randomly determined hour-long block earlier in the day. Using a similar protocol as Rathunde and Csikzentmihalyi (2005), these two measures allowed each of the participants' activity ratings to be placed into one of Dewey's four quadrants (listed above).

Results

During the four weeks of data collection, 1265 valid responses were collected from 32 different participants. A crosstabulation table and Cramer's V were used to detect the hypothesized relationship between quadrant and setting (each of the four weeks was treated as a different setting). Setting was a significant predictor of quadrant membership (*Cramer's V* = .158, *p* < .001). See Figure 1 below. The number of hours categorized into the disinterested quadrant was highest for pre- and post-course. The number of hours categorized as optimally engaging was highest at on-course 1 and 2 and lowest at pre- and post-course. In addition, from the activity and group size reporting on the ESFs, a change in how the activities were viewed was evident. After the adventure education course, structured classes were reported as more interesting and were, along with recreation, the activities most frequently reported as optimally engaging. Students generally reported greater optimal engagement when with others. Regarding the dispositional measures, only learning enjoyment, significantly increased from pre to post program (p < .04; Cohen's d = .45); the change in learning value was not significant (p > .05).

Discussion

The idea that a multitude of discrete engaging experiences may lead to a more substantive, dispositional shift in learning enjoyment and value, is consistent with the extant literature (e.g., Rathunde, 2009). It is possible that the shift in structured classes becoming more interesting after the course indicates an attitudinal or behavioral shift on the part of the college students. They are, perhaps, either selecting different courses or attending them with a more productive and positive attitude (cf. Sansone, 2009; Sansone & Thoman, 2006). Another possible explanation for the increased engagement and learning enjoyment may be the novelty involved in and the maturity gained through an adventure education semester compared to more

Figure 1: Quadrant by Setting

A bar chart titled "Figure 1: Quadrant by Setting" showing the percentage in each quadrant (y-axis from 0.0% to 60.0%) across four settings (pre course, on-course 1, on-course 2, post course). The four quadrant categories are Disinterest (blue), Fooling (red), Drudgery (green), and Optimal (purple).
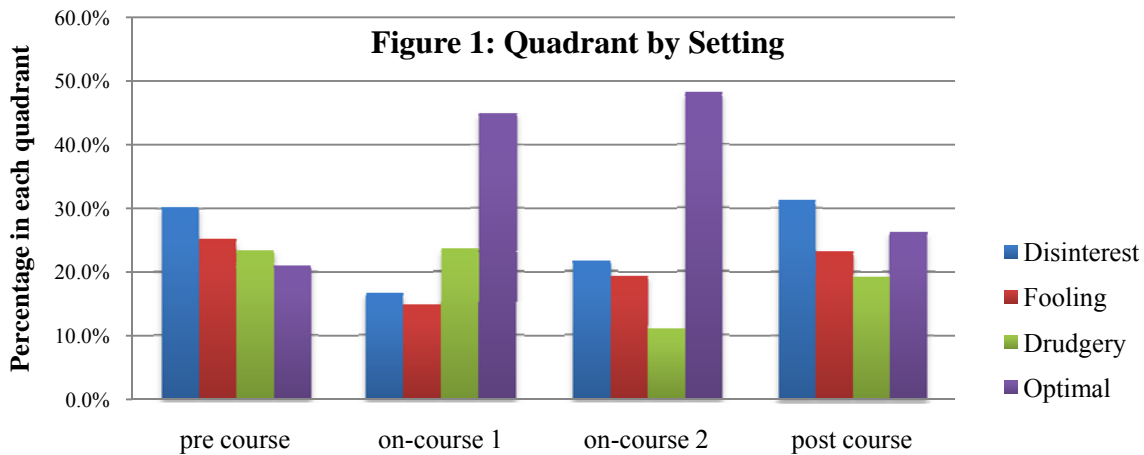
traditional college settings. However, this study has a number of limitations including the use of self-report measures, a convenience sample, and no comparison or control group. Future research should compare participants to non-participants to determine if the dispositional changes are simply a matter of maturation over time. Despite these caveats, there is good reason to believe that immersion in adventure-based semesters can help to foster the underlying nutriments of enjoyment and interest in learning, which are necessary to create lifelong learners.

References

Csikszentmihalyi, M., & Larson, R. (1987). Validity and reliability of the experience-sampling method. *Journal of Nervous and Mental Disease* 175(9), 526-536.

Dewey, J. (1910/1991). *How we think*. Amherst, NY: Prometheus Books.

Larson, R. (2000). Towards a psychology of positive youth development. *American Psychologist, 55,* 170-183.

McAuley, E., Duncan, T., & Tammen, V. V. (1987). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport, 60,* 48-58.

Rathunde, K. (2009). Experiential wisdom and optimal experience: interviews with three distinguished lifelong learners. *Journal of Adult Development*, *17*(2), 81-93, DOI: 10.1007/s10804-009-9083-x.

Rathunde, K. & Csikszentmihalyi, M. (2005). Middle school students' motivation and quality of experience: A comparison of Montessori and traditional school environments. *American Journal of Education*, 111(3), 341-371.

Sansone, C. (2009). What's interest got to do with it? Potential trade-offs in the self-regulation of motivation. In J. Forgas, R. Baumeister, & D. Tice (Eds.), *Psychology of Self-Regulation* (pp. 36-51). New York, NY: Psychology Press.

Sansone, C. & Thoman, D. (2006). Maintaining activity engagement: Individual differences in the process of self-regulating motivation. *Journal of Personality*, 74(6), 1697-1720.

Tanner, J., Arnett, J., and Leis, J. (2008). Emerging Adulthood: Learning and Development During the First Stage of Adulthood. In M. C. Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development* (pp. 34-67). New York: Routledge.

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Measurement of Challenge (Stress) Type and Intensity in Wilderness Education Students

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This project identified and measured self-perceived challenges on expedition-based educational programs at the National Outdoor Leadership School (NOLS).

Purpose

Kumpfer (1999) noted a research gap in identification of appropriate levels of challenge for positive development. No scales exist to measure self-perceived challenge level, hence there is a broad need for a challenge survey, well beyond the borders of wilderness education.

Within the field of wilderness education, identification of programmatic mechanisms helps clarify what goes on in the "black box" alluded to in the literature about experiential programs (Ewert, 1989). Describing benefits and their mechanisms can help preserve important aspects of programs that may have been less tangible, and further supports intentional programming. Scientific inquiry of the patterns of challenge and growth may appear to merely affirm folk wisdom, but documentation establishes baselines for future experimental studies. This new tool can help assess developmentally appropriate challenges in wilderness education.

A broader aim of this project was to shift a base metaphor about stress in wilderness education from *fear* (Ewert, 1986) to *challenge*. Stress scientists generally made this clarification with Selye (1974), but common language implies that stress and fear are both "bad" and primarily psychological constructs; while *challenge* is more open to being either positive or negative, as well as either a physical or mental test of abilities. This shifts educators' attitudes away from conventional psychology focused on treatment of pathology and towards positive psychology, which refocuses on productive, healthy, and enjoyable lifestyles (Seligman & Csikszentmihalyi, 2000) and optimism (Seligman, 2006). This epistemological shift theoretically transforms wilderness education by using a conceptualization for challenge that is more open to eustress and other positive life experiences.

Methods

A psychometric scale development methodology (DeVellis, 2003) was used over two primary phases. In the first phase, a pilot group of 72 participants from the sampling frame generated contemporary language to describe the research concepts of interest, using Selye's (1974) precise definition of *stress*. Students were asked at completion of their field experience what their greatest challenges were. Responses were sorted in a dichotomous tree (explained below) and condensed via constant comparison (Maykut & Morehouse, 1994).

During the second phase, the condensed responses from the first phase were formulated into rating scale item stems. A pilot group of 49 members of the sample population gave feedback that the language for the root question that best aligned with Selye's (1974) definition of stress was:

How difficult were these challenges for you on your recent NOLS course?

The pilot group also encouraged the use of KEYWORDS and (examples) like:

2) Learning new INTERPERSONAL SKILLS (communication, decision making, etc.)

6) The NEW environment (meeting new people, pooping in the woods, living outdoors, being dirty, etc.)

15) Staying MOTIVATED (to stay present in the moment, not be lazy, etc.)

This rating scale was then administered to a second sample of 296 students post-experience. In addition to descriptive statistics and scale internal consistency, exploratory factor analysis was used to examine the multi-dimensional nature of the data. The Outdoor Situational Fear Inventory (Young et al, 1995) was co-administered to a subsample to test for discriminant and criterion validity of the challenge scale.

Results

Student pilot groups clearly stated that they used the word *challenge* to describe what Selye (1974) called *stress*. The word *challenge* then became the primary name used for the stress construct. During phase one, 648 potentially challenging descriptors were pro-offered. Through constant comparison, which is an inductive approach to data management, these descriptors were reduced to 19 more general challenge descriptors that were subsequently converted to rating scale items. A dichotomous tree was used, splitting the responses into smaller and smaller branches. The first split in the tree was physical and mental branches. The next sorting split the mental branch into intrapersonal and interpersonal sub-branches, and the physical branch into program and environment sub-branches.

During phase 2, the rating scale for the 19 challenge items was completed by a second sample of 296 participants. Initial descriptive statistics showed that the items and scale exhibited relatively normal distributions. As a one-dimensional scale, the items were internally consistent (α=. 851). However, given the apriori division of challenges into four factors (intrapersonal, interpersonal, environmental, and program), a multi-dimensional model was assessed through the use of factor analysis. Despite the rationale for four factors, the results indicated a three factor model. The retained factors were labeled intrapersonal (α = .908), interpersonal (α =.763), and program and environment (α =.814). The challenge scale overlapped with some but not all of the facets of the OSFI, indicating a similarity, but not redundancy in the two scales.

Discussion

This new scale offers a tool to wilderness educators to measure programmatic challenges that are developmentally appropriate. The scale also opens a window into measuring and comparing self-perceived mental, physical, and social stressors.

Measuring challenge types and intensities on wilderness education expeditions allows more precise exploration of program factors and their influence on outcomes, opening a window to the processes that are important to wilderness education. The scale supports the values of positive psychology and positive youth development, providing a philosophy that capitalizes on student strengths and empowers them to use the significant life experiences from wilderness education (Kellert, 1998) to perform at higher levels in all future endeavors.

Quantification of challenges sets the stage for a follow-up project that aims to identify and measure specific coping strategies that are related to challenge type and level. This connects this work to performance under stress (Hancock & Szalma, 2008) which has been identified by NOLS alumni as the leading skill they associate with their wilderness education experience then use for their entire lives (Sibthorp, et al, 2008).

References

DeVellis, R.F. (2003). *Scale development: Theory and applications, 2ⁿᵈ ed*. Thousand Oaks, CA: Sage.

Ewert, A. (1989). *Outdoor adventure pursuits: Foundations, models, and theories.* Columbus, OH: Publishing Horizons.

Ewert, A. (1986). Fear: uses and abuses in outdoor adventure activities (also entitled elsewhere as "The therapeutic modification of fear through outdoor recreation activities"). *The Underseas Journal*, First Quarter, 1986, 44-48).

Hancock, P. & Szalma, J. (2008). Performance under stress, in P. Hancock & J. Szalma (Eds.), *Performance under stress (1-18)*. Burlington, VT: Ashgate.

Kumpfer, K. (1999). "Factors and processes contributing to resilience: the resilience framework," in Glantz, M. & Johnson, J., *Resilience and development: Positive life adaptations*. NY: Kluwer Academic.

Maykut, P. & Morehouse, R. (1994). *Beginning qualitative research: A philosophic and practical guide.* London: Falmer Press.

Seligman, M. (2006). *Learned optimism: how to change your mind and your life.* NY: Vintage Press.

Seligman, M. & Csikszentmihalyi, M. (2000). Positive Psychology: An Introduction. *American Psychologist, January, 2000.* 55(1): 5-14

Selye, H. (1974). *Stress without Distress*. Philadelphia: J. B. Lippincott Co.

Sibthorp, J., Paisley, K., Furman, N., Schumann, S., & Gookin, J. (2008). Long-term impacts attributed to participation in wilderness education: preliminary findings from NOLS. *Research in outdoor education, 2008.*

Young, A.; Ewert, A.; Todd, S.; Steele, T.; Quinn, T. (1995). The outdoor situational fear inventory: a newer measure of an older instrument. In:Vander Stoep, Gail A., ed. *Proceedings of the 1994 Northeastern Recreation Research Symposium*; 1994 April 10-12; Saratoga Springs, NY.: Gen. Tech. Rep. NE-198. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 177-182.

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Outdoor Situational Fear Inventory Subjectively Revisited

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Most outdoor programs rely on a form of adventure as a medium to produce change in participants. Adventure, by definition, involves aspects of fear (Mortlock, 1984). Fear is the natural response to risk and is a healthy and necessary emotion for survival (Priest & Gass, 2005). Fear, when used effectively, can be a positive education tool that stimulates learning and growth (Young, Ewert, Todd, Steele, & Quinn, 1994).

Background

Fear is an inherent aspect of outdoor programming. As such, the Outdoor Situational Fear Inventory (OSFI) was developed as a research instrument to study and better understand the construct of fear in outdoor settings (Ewert, 1988; 1989). The OSFI has been used over the years to examine fear in Outward Bound courses (Ewert, 1988; 1989; Ewert & Young, 1992; Young & Ewert, 1992), a residential camp (Quinn, 1996), a two-week college outdoor education practicum (Young, Ewert, Todd, Steele, & Quinn, 1994; Young, Quinn, & Steele, 1994), and weekend academic college outdoor courses (Ward & Hobbs, 2006). The OSFI has provided a means to identify changes and differences among research variables. However, one of the noted limitations of the OSFI is that is does not allow for the accurate separation of fearful and non-fearful participants into discrete groups (Young, Ewert, Todd, Steele, & Quinn, 1994).

Fear is made up of four components: the subjective experience, associated psychological changes, outward expressions, and attempts to remove the source of fear (Rachman as cited in Ewert 1986). Although fear is subjective, past research has utilized the OSFI to study fear with objective measures. Additionally, it has been found that the OSFI can be difficult to interpret because the continuum scale is viewed differently by individuals (Young, Ewert, et al., 1994). The purpose of this study was to capture the subjective nature of fear using established OSFI items.

Methods

Based on its utility in examining human subjectivity, or an individual's point of view (Brown, 1980; 1993; 1997; Stephenson, 1953), Q methodology was used in this study to capture the subjective nature of fear. Q method is used to identify and categorize attitudes, beliefs, and viewpoints of participants. The basis of Q methodology is the Q sort technique and Q factor analysis (Brown 1980; 1993). Q methodology utilizes by-person factor analysis, instead of the traditional by-variable analysis, to identify groups of participants who factor comparable items together (Watts & Stenner, 2005).

Study participants were 33 university students enrolled in an outdoor living skills course that included a week-long expedition. The original 33 items from the OSFI were used as the Q sort statements. The participants sorted the 33 OSFI statements along a continuum from "Most Fearful/Anxious About" to "Least Fearful/Anxious About" prior to their week-long expedition. Simple demographic information such as age, sex, and outdoor experience was also collected. Individual sorts were recorded. The sorts were then correlated and factor analyzed utilizing the software program PQMethod 2.11. The resulting factors represented viewpoints associated with students' fears of participating in the week-long expedition.

Following the Q sort, the participants also answered eight follow-up questions to help clarify and support the findings from the Q sorts.

Results

Thirty-one of the thirty-three participants loaded significantly on one of three factors that emerged from the data: namely Social Fears, Physical Fears, and Personal Fears. Each factor represented a unique, but characteristic, point of view of the participants in relation to anticipated fears associated with a week-long expedition. Based on z-scores, all three factors had a model factor array produced as well as distinguishing statements. These helped in the interpreting of the factors.

Social fears - Factor One was defined by 16 sorts; five of the 16 participants that composed the factor were female. The majority reported between five and sixty nights spent outside in the previous year. Factor One was least concerned with environmental fears such as getting dirty. They were most concerned with social fears such as letting others down. Factor One also had 21 distinguishing statements – meaning that the statements were placed in significantly different positions on the sort when compared with the other two factors.

Physical fears - Factor Two had 10 defining sorts, of which were eight males. The majority of the participants on Factor Two had spent less than five nights outside in the previous year. Factor Two was least concerned with social fears. They were most concerned with physical fears such as insufficient food. There were 25 distinguishing statements for Factor Two.

Personal fears - Factor Three was comprised of five defining sorts; two were female. Outdoor experience ranged between five and fifty nights spent outside in the previous year. Factor Three was least concerned with physical fears such as not having enough physical strength. They were most concerned with personal fears such as not getting their money's worth out of the class. Factor Three had 18 distinguishing statements.

Discussion

Experience, sex, and other variables have been shown to influence perceptions of fear (Ewert, 1988; 1989; Ewert & Young, 1992; Quinn, 1996; Young & Ewert, 1992; Young, Quinn, & Steele, 1994; Ward & Hobbs, 2006). This study, which used Q method, also showed that these variables were influential in perceptions of fear. However, it provided a greater understanding that within the group of participants there were three distinct perceptions of fears - Social, Physical, and Personal. Those with less experience had different fears than those that had more experience, and the two groups with similar experience had different fears.

Furthermore, Q method addressed some of the concerns associated with the OSFI. Young, Ewert, et al. (1994) discussed problems with subjectivity associated with OSFI and that participants viewed the scale too differently to allow firm descriptors. Yet, the subjective nature of fear is captured with Q method in that a viewpoint expressed by one individual is just as valid as another expressed viewpoint and cannot be deemed invalid (Brown, 1980; 1997; Durning & Brown, 2007). There was a separation of participants into discrete groups based on their perceptions of fears. In this case, there were three distinct factors.

This study showed an application of Q method with the original OSFI items. Q method addressed the previously raised concerns in regards to subjectivity. Although it was only utilized during the students pre-experience, it did show value in interpreting perceived fears.

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Further work could be done utilizing Q method with the OSFI items to test its applicability to other situations as well as to capture changes in perceptions before and after an experience.

References

Brown, S. R. (1980). *Political subjectivity: Applications of methodology in political science.* New Haven, CT: Yale University Press.

Brown, S. R. (1993). A primer on Q methodology. *Operant Subjectivity,* 16(3/4), 91-138.

Brown, S. R. (1997). *The history and principles of Q methodology in psychology and the social sciences.* British Psychological Society symposium on "A Quest for a Science of Subjectivity: The Lifework of William Stephenson," University of London; and conference on "A Celebration of Life and Work of William Stephenson (1902-1989)," University of Durham, England. Retrieved from http://facstaff.uww.edu/cottlec/Qarchive/Bps.htm

Ewert, A. (1986). The therapeutic modification of fear through outdoor adventure recreation activities. *Bradford Papers Annual, 1*, 1-10.

Ewert, A. (1988). Identification and modification of situational fears associated with outdoor recreation. *Journal of Leisure Research*, *2*, 106-117).

Ewert, A. (1989). Managing fears in the outdoor experiential education setting. *Journal of Experiential Education, 21,* 19-25.

Ewert, A. & Young, A.B. (1992) Fear in the outdoor environment. In G. vander Stoep (Ed.) P*roceedings of the 1991 Northeastern Recreation Research Symposium*. April 7-9, 1991. Saratoga Springs, NY. USDA Forest Service: Northeastern Forest Experiment Station.

Mortlock, C. (1984). *The adventure alternative.* Milnthorpe, Cumbria, United Kingdom: Cicerone Press.

Quinn, T (1996). *An instrument to measure perceived anxiety in a resident outdoor adventure education setting.* Unpublished doctoral dissertation. The Ohio State University, Columbus.

Priest, S. & Gass, M. (2005). *Effective leadership in outdoor programming.* Champaign, IL: Human Kinetics.

Stephenson, W. (1953). *The study of human behavior.* Chicago: University of Chicago Press.

Young, A.B. & Ewert, A. (1992). Fear in outdoor education: The influence of gender and program. In K. Henderson (Ed.), *Proceedings of the CEO Outdoor Education Research Symposium*, January 17-19, 1992. Martinsville, IN. Cortland, NY: Coalition for Education in the Outdoors.

Young, A.B., Quinn, T., and Steele, T. (1994). The relationship of continuum scaling scores and certainty scaling scores on the Situational Fear Inventory. In L. McAvoy, A. Stringer, and A. Ewert (Eds.), *Coalition for Education in the Outdoors Second Research Symposium Proceedings*, January 14-16, 1994. Martinsville, IN., Cortland: Coalition for Education in the Outdoors.

Young, A., Ewert, A., Todd, S., Steele, T. & Quinn, T. (1994). The outdoor situational fear inventory: A newer measure of an older instrument. In G. A. Vander Stoep (Ed.), *Proceedings of the 1994 Northeastern Recreation Research Symposium,* April 10-12, 1994. Saratoga Springs, NY (General Technical Report NE-198, pp. 177-182). Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.

Ward, W. C., & Hobbs, W. D. (2006). Changes in perceptions of fear in a short-term, college outdoor adventure program. *Journal of Experiential Education, 28*(3), 274-278.

Watts, S., & Stenner, P. (2005). Doing Q methodology: Theory, method, and interpretation. *Qualitative Research in Psychology,* 2, 67-91.

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Moving Beyond an Environmental Education Model:
Educating for Sustainable Development
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Background

Since the late 1960's and early 1970's, environmental education (EE) has been promoted as a sequential curriculum for prompting change in the public's awareness, knowledge, values, attitude, and behavior concerning the environment (Stapp, 1969). However, more recently, Educating for Sustainable Development (ESD) has received increased attention in the struggle for the environment. According to Garrard (2007), ESD "is oriented toward provisionality, dynamic responsiveness, and the future, and it emphasizes the interrelatedness of environmental problems with economic and social justice issues such as global inequity, warfare, and consumerist forms of desire." The prominent Eco criticism of EE strikes at the simplistic construction of the framework that fails to include the cultural constructs of economic and cultural forces at play with the environment. Consequently, this presentation will focus on four main elements, 1) ESD, 2) the pilot testing of Nisbet et al's. (2009) Nature Relatedness Scale in a course focused on sustainability, 3) reflections on educating for sustainable development where coal is king, and 4) the humanization of EE and educating in the outdoors.

Methods

In the spring term of 2011, I team-taught a course on environmental and sustainability issues of central Appalachia, entitled *Hobbits in Appalachia: Sustainability Issues in WV and KY*. This course was offered on the Marshall University campus in Huntington, WV. Huntington is essentially a gateway to the central Appalachian coalfields, in a state plagued by over a century of plundering of its natural resources. The primary course topics covered were natural resource extraction (coal and timber), local food systems, and consumption / consumerism. This course utilized an experiential education style format, which included seminar-style and student-led discussions, field experiences, service learning, and guest speakers.

In order to develop an understanding for how the course affected the students' perceptions, values, and reported behaviors in and about the environment, we used the Nature Relatedness Scale (NRS) (Nisbet et al., 2009) in a pre-test / post-test fashion as a pilot project. The NRS tests three constructs: self, perspective, and experience. NR-Self (ecological-self) measures how strongly "people identify with nature", NR-Perspective measures one's relationship with nature through attitude and behavior, and NR-Experience measures the "physical familiarity and attraction people have to nature" (Nisbet et al., 2009, p. 732). Additionally, a control group (two PSY 323: Experimental Psychology classes) were given the pre-test and post-test for comparison purposes. All students were able to self-select to participate and we attempted to garner a census sample in all classes.

Results

Using a paired-samples t-test to compare the pre- and post-test results of students enrolled in our course (N=11), a significant difference was found at the 0.00 level as the overall NRS score increased by 0.0355. When considering the three constructs of the scale, the students' NR-Self changed by 0.057 from pre to post-test and was therefore statistically significant, NR-Perspective changed by -0.1225 and was significant, and NR-Experience changed by 0.0488 and was significantly different. Alternatively, the control (N=33) group pre-post overall score also

showed a significant difference at the 0.00 level (decrease in composite score of 0.01818). When comparing the experimental to the control group in a one-way Analysis of Variance, which compares the mean scores between different data sets (pre-test vs. post-test or experimental group post-test vs. control group post-test), the post-test scores were significantly different at the 0.003 level (Experimental Group's Composite Mean, 4.18; Control Group's Composite Mean, 3.50). In considering the three constructs of the scale in the post-test, a significant difference was detected for NR-Self and NR-Experience at the 0.02 and 0.01 level among experimental group, respectively; however, a significant difference was not detected for NR-Perspective (significance level of 0.43).

Discussion

The results of this study suggest that the course potentially did raise the students' level of Nature Relatedness in accordance with Nisbet et al's. (2009) scale. Additionally, when compared to the control group, the data of the *Hobbits* students were significantly higher than their counterparts in the control group. However, these results must be interpreted cautiously on a number of points. Primarily, the sample size for this study, particularly the experimental group, is too small to generalize the findings beyond the students enrolled in this course. Moreover, the students in the course had a higher pre-test score in comparison to the control group, from the outset of the semester. This is not surprising considering the course was an elective and likely attracted a population with an interest in the environment.

One of the greatest challenges highlighted by course participants was defining sustainability. Based on numerous activities, students at large seemed perplexed by the multiple definitions of sustainability. Additionally, a clear dissidence emerged with many of our students as they attempted to come to terms with the environmental, cultural, and economic relationship surrounding one of the region's top industries, coal mining. Though students entering the course were found to have a higher reported relationship with nature based on the NRS, the region's abject poverty juxtaposed with the economic stimulus of natural resource extraction often superseded the notion of living sustainably- even with direct linkage to issues of environmental and one's own health.

For over 40 years, EE has worked to educate, connect, and promote environmental problem resolution, in large part from a biocentric perspective. However, one of its most important objectives, participation towards resolving environmental problems, has yet been realized (Tbilisi Intergovernmental Conference, 1978; Knapp, 2000). Might ESD offer environmental education the human-environmental connection that neglects those who do not lean green? At minimum, ESD should hold a more prominent place in the discourse and the humanization of the environment might be a lesson well learned for EE and educating in the outdoors (Strife, 2010).

References

Garrard, G. (2007). Eco criticism and education for sustainability. *Pedagogy,* 7(3). 359-383.

Knapp, D. (2000). The Thessaloniki Declaration: a wake-up call for environmental education? *Journal of Environmental Education, (31)*3, 32-39.

Nisbet, E. K., Zelenski, J. M., and Murphy, S. A. (2009). Nature relatedness scale: linking individual's conection with nature to environmental concern and behavior. *Environment and Behavior, 41*(5), 715-740.

Stapp, W. B. 1969. The concept of environmental education. Journal of Environmental Education 1(1), 30-35.

Strife, S. (2010). Reflecting on environmental education: where is our place in the green movement? *Journal of Environmental Education, (41)*3, 179-191.

Tbilisi Intergovernmental Conference on Environmental Education. (1978). *Toward an action plan: A report on the Tbilisi Conference on Environmental Education.* Washington DC: US Government Printing Office.

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Parents and Camps: Questions and Concerns
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Campers and their positive development is the major focus of most camps (Garst, Browne, & Bialeschki, 2011). Parents/guardians are highly instrumental in initiating and maintaining camp opportunities for their children. Parents' decisions about their children's camp may be substantially dependent on what they know about a camp, its staff, and the policies that will provide safe and enjoyable experiences for their children. Howe (2010) suggested that a new parent generation has emerged. Whereas parents used to be considered *helicopter* parents, they can now be described as *stealth-fighter* parents. They are often not only protective but they are also prone to intervene to assure that their children are treated fairly.

Related to these parental approaches are the ongoing concerns about the safety of camps both physically and psychologically (e.g., homesickness, bullying). For example, since bullying often occurs in less structured situations, parents want to assure that camp counselors know how to handle these situations. Further, articles in in *Newsweek* and *Time* magazines, respectively, noted that parents similarly seem to be highly interested in how to maintain a connection with their children at school (Setoodeh, 2004) as well as during camp sessions (Lee-St. John, 2005). For example, webcams and various internet services are becoming common services offered by camps. Many parents want to assure that their children are safe and that they have means to communicate with them if needed.

Parental/guardian concerns in the 21st century have brought new challenges to camp administrators who strive to stay abreast with the changing society. To that end, the American Camp Association (ACA) began systematically collecting data about directors' perceptions of emerging trends and issues that were being encountered. The 2011 study (Henderson & Bialeschki, 2011) as well as the previous studies conducted in 2007 and 2009 (Schaumleffeland, Klarner, Carmichael, & Garst, 2009) indicated that the number one issue for directors was parent communication. The purpose of this paper is to expand upon the parent communication issue using both qualitative and quantitative data collected from camp directors in 2011.

Methods

During spring of 2011, survey questions were designed by ACA staff to query camp administrators about their perceptions regarding societal issues as well as administrative, staffing, and programming concerns pertaining to camp. Data were collected from 228 primary contacts at accredited camps (i.e., from a population of about 2300 camps) through an electronic survey. A 12% click-through rate was obtained, which was a good response rate for an electronic survey. This analysis examines the qualitative responses to the query, "Please identify the 3 most frequently asked questions that you received from parents/guardians this past summer." These responses were further explained using descriptive results from other quantitative questions from the survey.

Results

The major categories of qualitative responses included: staff qualifications and supervision, camper health and safety, opportunities for technology and communication with children, camper expectations and behaviors, and camp program logistics.

Parents/guardians asked questions about both the qualifications of staff as well as how staff supervised children. Qualifications related to questions such as: Are staff backgrounds checked? What are the counselors' ages? How are staff members chosen? Some questions were also raised about how supervision occurred at camps such as: What is the camper to staff ratio? What kind of supervision do campers get from staff? Camp directors also indicated on the survey that they did provide particular types of staff training. For example, specific camper behavior issues were addressed in staff training with 90% of the camps indicating that bullying was "somewhat" to "very significant" as an area of training for staff.

A second major category of questions that directors said they were frequently asked pertained to health and safety management at camp. These concerns related to the health care available as well as questions about food service and overall safety. Examples of questions included: What happens if my child gets sick? Do you have a nurse on duty? How do you handle campers' meds? Parents were also interested in food questions such as: Do you serve organic food? How do you handle food allergies? Safety issues related to whether or not the camp had 24 hour security as well as how safe particular activities were such as around water areas. The quantitative part of the survey indicated that over 70% of all camps said they tried to accommodate the specific dietary needs/allergies associated with peanut/ nut allergies, vegetarian preferences, lactose intolerance, and gluten-free needs.

A third major area of questions concerned technology and camper to parent communication. Common questions were asked about visitor policies and whether parents could spend time with children while they were at camp. Several parents asked about campers bringing cell phones so they could stay connected to their parents. Other questions asked related to the availability of email as well other forms of social media.

Questions about what campers could expect and how specific behavior issues are addressed were also frequently asked. Questions concerned how campers were placed in units/cabins and whether or not a child could be with a specific friend. The return rate of campers was inquired as well as what characteristics other campers would have. Although not a new issue, how homesickness was handled was also the concern of several parents as was the policy on the discipline of campers by staff.

Some parents just wanted to know more about the logistics of camp. What activities are offered? How much time do campers spend outside? How is drop off and pick up handled? Related to this category of logistics was a group of other questions pertaining to transportation (e.g., Do you offer transportation? Do you use public transportation?), weather (e.g., what happens if severe weather occurs? Are the cabins air conditioned?), costs (e.g., Do you offer discounts? Why is camp so expensive?), and registration (e.g., How do I register? How is enrollment going?).

Discussion

Some questions asked by parents did not appear new and were all too familiar to most directors. However, camp administrators should heed the emerging concerns about how camper behavior is addressed as well as how communication occurs between parents and campers.

Camp directors cannot anticipate all the questions that will be asked of them. However, attempts can be made to assure that policies are in place for the most common issues. Each camp must determine its own policies, but clearly many camps have written, reviewed, and are implementing particular policies as they pertain, for example, to bullying and the use of cell phones at camp.

If not already a part of the camp's website, directors could institute a "frequently asked questions" link that could address some of these concerns. Of course parents should always be encouraged to interact directly with camp administrators, but anticipating these questions might be useful to the parents and a time-saver for camp administrators. Posting of policies related to such issues as bullying and staff qualifications is another possibility to consider. Given the ubiquity of opportunities that exist on camp websites, links to written policies would be advisable.

In many ways camps operate somewhat similarly to schools and yet quite differently. The roles of teachers and camp staff are similar. However, in schools, parents have the opportunity to see their children every day. In resident camps, this communication is not as easy. Parents are concerned about keeping in touch with their children. Therefore, camp directors should deliberately address how to ease parents' concerns about communication while at the same time allowing campers to have the independence that might not be as evident at home.

Some questions asked by parents are areas that have been studied and implemented through the ACA Camp Accreditation process. Many parents/guardians may not know what is involved in the accreditation process and the standards that camps strive to meet. Many camps affirm to parents that they are accredited, but perhaps the website could also address some of the mandatory standards that are required to assure parents that health and safety is always paramount.

Communication with parents will likely continue to be an important issue for camp staff. While each camp director has situations unique to his or her camp, an examination of global and universal questions may provide insight for camp policies as well as the training and education of staff. Finding ways to share the camp's answers to these concerns may go a long way in helping parents feel comfortable and confident in making the final decision to send their child to camp.

References

Garst, B. A., Browne, L. P., & Bialeschki, D. (2011). Youth development and the camp experience. *New Directions in Youth Development*, No. 130, Summer 2011, 73-87.

Henderson, K. A., & Bialeschki, D. (2011). We're all in the same boat together: Trends and issues in camps. *Camping Magazine, 84*(6), 60-63.

Howe, N. (2010). A new parent generation: Meet Mr. and Mrs. X. *Education Digest*, 75(9), 4-12. Retrieved from: http://eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch _SearchValue_0=EJ891886&ERICExtSearch_SearchType_0=no&accno=EJ891886

Lee-St. John, J. (2005). Keeping tabs on campers. *Time*, 166(3), 16.

Schaumleffeland, N. A., Klarner, C. E., Carmichael, R., & Garst, B. A. (2009). *Emerging trends and issues in American camps*. Paper presented at the 2009 ACA National Conference in Orlando, FL.

Setoodeh, R. (2004). The connected classroom. *Newsweek*, 144(13), 87.

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The Effects of Carbon Footprint Calculation on Student Trip Leaders: A Pilot Study
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Background

According to President Barrack Obama, "the threat from climate change is serious, it is urgent, and it is growing (2009)". Many college outdoor recreation programs place great emphasis on respecting and caring for the environment while in the field, however, few programs are aware of the impacts their decisions outside of the field are having on our planet. There are a number of articles in the outdoor recreation and higher education literature which act as a call to action, imploring these industries to take measures to lessen their overall impact on the planet (Cortes, 2009; O'Connell, Potter, Curthoys, Dyment & Cuthbertson, 2005; Irwin, 2010; Ross, 1996). These articles provide inspiration and good ideas yet stop at the point of putting the ideas into practice and evaluating their effects.

The purpose of this pilot study was to conduct an in-depth investigation of the characteristics and possible relationship between having a university-sponsored Outdoor Program (OP) student leaders calculate the carbon footprint of a trip and the decisions they make while planning that trip. By using student trip leaders, the researchers plan to understand how having staff calculate their trip's carbon footprint affect their trip planning decisions and environmental attitudes. The decisions we focused on are the distance traveled and food choices. While there are many other aspects of outdoor recreation trips that impact the environment, we have chosen to focus on these for two reasons. The first reason is these are the factors that student trip leaders at OP have direct control of and the second being these factors were chosen because they are currently the easiest to quantify in terms of GHG emissions.

Methods

Researchers collected archival data from the previous academic year to calculate carbon footprint data prior to any intervention. To encourage student trip leaders to analyze the ecological impacts of their proposed trips a carbon footprint calculator was included with all trip proposal forms in the fall of 2011. The trip leaders were encouraged but not required to complete and return this attachment then researchers collected these forms and the GHG emissions and other variables were compared to those of the previous semesters' proposed trips.

Researchers also investigated the environmental attitudes of student trip leaders compared to those of a representative sample of students (control). Online surveys using the New Ecological Paradigm (NEPR) (Dunlap, Van Liere, Mertig & Jones, 2000) were used to make this comparison. The analysis of the surveys included calculating descriptive statistics and inferential tests.

To provide insight into the quantitative results based on survey responses student trip leaders were invited to attend one of two focus groups. Additionally, a panel of experts validated the focus group questions. Following the focus groups, recordings were transcribed and analyzed independently by the researchers. Trends were then documented and analyzed for relevance to the study.

Results

Data analysis revealed significantly lower average carbon footprints for the post-intervention semester, a -47.1% magnitude of change from the fall 2010 semester and a -54.9%

magnitude of change from the spring 2011 semester. This provides a limited, yet intriguing, answer to the question, what is the relationship between having student trip leaders calculate their trips' carbon footprint and their decisions for trip planning?

The post-intervention environmental attitudes of student trip leaders as compared to a random, representative sample of Appalachian State University students showed that the random sample scored slightly higher. ASU OP student trip leaders scored an average of 49.83 on a scale based on the New Ecological Paradigm Revised (NEPR) (Dunlap, Van Liere, Mertig & Jones, 2000) and had a sample size of six. The control group had a sample size of 71 and scored an average of 55.66 on the same scale. A one-sample T-test ($p = .13$) was calculated and the NEPR scores were not significant. It is hard to draw any formal conclusions from this data for several reasons. A huge reason is the discrepancy in sample sizes. Another reason is the fact that the averages are so close.

While research did not yield a statistically significant connection between intervention efforts and participants' NEPR score, focus group data did reveal a stated correlation between the two. Multiple focus group members noted that the act of calculating a carbon footprint forced them to acknowledge the sentiment that programming efforts have environmental effects.

Discussion

If outdoor professionals proclaim to be stewards for the environment, then how can college outdoor programs begin to create awareness in student staff about their impacts on the environment? The authors believe educating future industry professionals in the early stages of their development will lead to positive changes.

Based on focus group results and the literature (Graham, Koo & Wilson, 2011; Wakeland, Sears & Venkat, 2009) the researchers suggest that an educational component prior to carbon footprint calculation be added to the intervention strategy. This should include: a definition of carbon footprint, how the student trip leaders can affect their trip's carbon footprint and information on how to gauge the numbers they receive when calculating a carbon footprint. This last piece of information could be simply be included on the calculator itself. Beyond a single workshop for student trip leaders, it should also be noted that professional development opportunities be provided for professional staff as well.

As O'Connel et al. (2005) suggest, the development of a program's front-country identity must be addressed. In this time of global climate change (Obama, 2009) it is no longer enough for programs to simply teach and train leaders to use the ubiquitous "Leave No Trace" ethics. While this sentiment is promoting a generation of outdoor leaders to serve as stewards for the environment, it is also having the potential of limiting these individuals scope of how large the concept of "Trace" really is. The ethic must extend to preservation and conservation practices in the office, in trip planning decisions, as well as the wilderness. Intentional interventions and collaborative efforts between educational and administrative bodies are the foundation for institutions to establish positive practices for creating "sustainably literate" graduates (O'Connell, 2005). As such, OP administrators must make marked effort to implore and impel its staff to look at decisions and actions through a developmentally critical lens. How are these students being trained effectively to ask questions of their own sustainable practices as global citizens, not just OP employees?

One major factor in the success of initiatives such as this must come from collaborative efforts between universities on a national scale. Through organizations such as the Association of Outdoor Recreation and Education (AORE), the Association of Experiential Education (AEE),

the Association for the Advancement of Sustainability in Higher Education (AASHE), and the National Intramural-Recreational Sports Association (NIRSA) we can begin a national dialogue among industry professionals to establish programmatic practices and standards for OP units. This can only come from a concerted effort to develop committees and policy that stand to be mutually beneficial to the continued development of positive programming opportunities and environmentally sound practices.

References

Cortese, A. (2003). The critical role of higher education in creating a sustainable future. Society for College and University Planning. Retrieved on 27 February 2011 from: http://www.aashe.org/resources/pdf/Cortese_PHE.pdf

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. (2000). Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. Journal of Social Issues, 56(3), 425-442. Retrieved from EBSCOhost Ecoversity putting eco into the university. (2009). Ecologist, 39(2), 70-71. Retrieved from EBSCOhost. Environmental Protection Agency. (2011, March 25). Fuel economy. Retrieved from: http://www.fueleconomy.gov

Graham, J., Koo, M., & Wilson, T. (2011). Conserving Energy by Inducing People to Drive Less. *Journal of Applied Social Psychology*, *41*(1), 106-118.

Irwin, D. (2010). Weaving the threads of education for sustainability and outdoor education. Unpublished manuscript, Adventure Recreation and Outdoor Education, University of Canterbury, Christchurch, NZ. Retrieved from http://ir.canterbury.ac.nz/bitstream/10092/3637/1/thesis_fulltext.pdf

O'Connell, T. S., Potter, T. G., Curthoys, L. P., Dyment, J. E., & Cuthbertson, B. (2005). A Call for Sustainability Education in Post-Secondary Outdoor Recreation Programs. International Journal of Sustainability in Higher Education, 6(1), 81-94.

Obama, Barack. "United Nations Summit on Climate Change." New York, NY. 22 Sept. 2009.

Ross, J. (1996). Will the Real Eco-Educator Please Stand Up?. Association of Outdoor Recreation & Education Conference Proceedings, 145-154. Retrieved from EBSCOhost.

Wakeland, W., Sears, L., & Venkat, K. (2009). Measuring the Effects of Food Carbon Footprint Training on Consumers. *Sustainability: The Journal of Record*, 2(1), 45-52. Retrieved from EBSCO*host*.

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The Communal Nature of Outdoor Orientation Programs: An Exploratory Study
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Colby College in Waterville, Maine is one of the few colleges to require all first year students to participate in an outdoor orientation program. Colby Outdoor Orientation Trips (COOT) is also one of the largest outdoor orientation programs in the United States (Bell, Holmes, Williams, 2010), and one of the oldest, having provided outdoor orientation experiences for 37 years. The college administration has supported COOT because of the benefits student receive from the trips. Faculty and staff have observed these benefits, but no formal assessment of the outdoor orientation program has been conducted. Both Galloway (1999) and Bell, et. al., 2010) have noted that few outdoor orientation programs participate in formal assessments.

Although no formal assessment has been conducted on the COOT program, based on observations by staff at Colby, it is theorized that students benefit from COOT because the program introduces them to a positive small group culture. Researchers wonder if the benefits of the COOT trip transfers from the trip context to the campus context? For instance, one of the goals of many outdoor orientation programs like COOT is to develop teamwork, trust, and positive group norms. Do these group norms transfer from the trip to the campus? To investigate this question in a theoretical sense, researchers used a theoretical definition of interpersonal relationships called communal relationships. This term was coined by Clark & Mills (1979) and defines relationships that have high degrees of care, trust and commitment to the group rather than the individual as communal. Researchers wondered if an outdoor orientation program that was communally focused would transfer to students having a communal focus on campus when discussing the college? In effect, would the culture of a trip transfer to college?

As a first step to evaluate the larger question of "cultural transfer", researchers used Clark & Mills (1979) distinction of exchange and communal relationships types. Exchange norms use reciprocal exchange of benefits as the basis (summon bonum) of a relationship, whereas communal norms use care and emotional engagement. Researchers propose that students who engage in more communal outdoor orientation trips (defined by the communal/exchange survey) will report greater feelings of social support and optimism, and by association these students are more likely to experience college as a communal experience. Students who engage in more exchange-based outdoor orientation trips where fun & enjoyment in exchange for effort is the basis for relationships will have a different experience. Researchers expect students high in exchange to report less social support and optimism and perceive college as an exchange experience (balance of costs and benefits). The researchers are exploring this relational definition to better understand Clark's & Mill's theory of communal relationships (1979) and to evaluate if this distinction has value as a theoretical position to understand the mechanisms of outdoor orientation programs.

Method

Participants were provided an online survey in mid October, six-weeks after the completion of the outdoor orientation trips. The survey was emailed to all first-year students ($N = \sim 450$) from the Dean of Campus Life. The survey contains five different measures listed below:

1. Perception of communal relationship (Clark & Mills, 1979)
2. Perception of exchange relationship (Clark & Mills, 1979)
3. Social integration (Weiss, 1972)
4. Nurturance & Mattering (Weiss, 1972)
5. Perception of college (created for this study)

The key dependant variables (DV) were the measure of a student's communal or exchange orientation. Initially we were interested in how the DV varied by leaders, type of trip (backpacking, service, Habitat for Humanity, art adventure, etc) and participants distance from home to college.

Results

Students completed 102 surveys, one survey was removed because of incomplete data and one survey was removed due to an unusual pattern of answering the questions (the same answer for all questions). The rest of the data were cleaned and downloaded into the Statistical Package for Social Sciences (SPSS) version 19.

Exploratory statistical analysis of the survey demographics resulted in 65 females, 34 males, 1 transgender student completed a survey. The overall population at Colby is 53% women, 47% men. A higher proportion of female students (65%/53%) completed the survey as compared to the overall Colby population. In the sample of 100 students, seven were international students, 47 from the New England area and 36 from the US, but outside of the New England region.

The questions of whether students differed by communal or exchange relationship focus was not answered by this data set because students in general rated themselves as being high in exchange and well as high in communal norms, even though this was thought to be a conceptually dichotomous variable. The overall communal mean ($X = 4.11$) and the exchange mean ($X = 4.05$) were not only similar overall, but covaried ($R^2 = 0.42$, p < .001).

A few significant relationships were found in the data. For instance students who scored highly in having guidance ($X = 4.53$) also scored highly on the communal relationship scale ($X = 4.11$, $r = .37$, p < .001), whereas students who scored higher in nurturance (defined as having someone you care for and who depends upon you) also scored higher in exchange relationships ($r = .56$, p < .001).

Results on the survey showed that reports of satisfaction with the COOT program were correlated with satisfaction with campus life ($r = .42$, $p < .001$) and with Colby College in general ($r = .33$, $p < .001$), yet no significant relationship was found between satisfaction with campus life and Colby college in general.

Overall the data showed no significant differences by individual trip (n = 29), types of trip (n = 9, e.g. backpacking, canoeing, back country, front country), level of physical intensity, nor by the geographic location of the students homes.

Discussion

The survey results demonstrated that students who participated in the outdoor orientation program had the perception that they had a high communal orientation, but also a high exchange orientation. The students who took the survey were high in the other measures of social integration, nurturance, and mattering. The survey contained three areas where students could make additional comments about their experiences with Colby, COOT, and the Office of Campus Life. The majority of the comments specifically addressing COOT (> 90%) were positive, and demonstrated that students enjoyed the trips, felt they were helpful in establishing a new group of friends, and wanted to continue to meet with their COOT group throughout the year.

Given the high scores in all areas, it may be that students who felt positively about the program were most likely to complete the survey and while doing so, answered in a way they thought would most benefit the COOT program. It also may be true that students in a group are able to have both high communal and exchange relationships and vary their relationship orientation as a response to a situation, rather than carrying a communal or exchange style across all relationship types.

The one interesting outcome to the Colby program was how the positive perspective on COOT co-varied with positive feelings about the Colby office of Campus Life and Colby College in general. As a college and a campus office tries to engage students into the culture and a communal connection of a college, the outdoor orientation program may help build upon such a relationship.

Lastly, a more effective measure of communal and exchange relationships needs to employed to test this theory with a large group of college students. It is important to determine if the communal/exchange relationship focus is more of a personality type that consistently expresses itself, a preference that is consistent but changeable, or a situational variable that changes often.

References

Bell, B. J., Holmes, M. R., & Williams, B. G. (2010). A census of outdoor orientation programs at four-year colleges in the united states. *Journal of Experiential Education*, 33(1), 1-18. doi: 10.5193/jee33.1.1

Clark, M. S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychology, 37*(1), 12-24. doi:10.1037/0022-3514.37.1.12

Galloway, S. (2000). Assessment in Wilderness Orientation Programs: Efforts to Improve College Student Retention. *Journal of Experiential Education, 23*(2), 75-84.

Weiss, R. (1974). The provisions of social relationships. In Z. Rubin (ed.), *Doing unto others* (pp. 17-26). Englewood Cliffs, NJ: Prentice Hall.

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The Impact of International Education Abroad ASU SOLE Expeditions
on Greening Behaviors

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Background

The children that Richard Louv, author of *Last Child in the Woods (2008) spoke of in relation to nature deficit disorder are the college students of today.* Our planet's ecological health is directly related to the behavior of its inhabitants- present and future. Educators must take the lead in helping college students as inhabitants of the Earth and the policy makers of the future to develop a connection to the *Earth* so that they will develop habits that are environmentally responsible. And so, questions arise- Are college students better connected to electronics/media than to a sense of place and knowledge of the earth? What do students remember most when they leave college? What knowledge and skills do they use in everyday life? This study investigates the impact of participation in the SOLE (Student Outdoor Learning Expedition) at Appalachian State University on student greening behaviors. SOLE is an education abroad experience that combines adventure education, cultural immersion, carbon neutral education, and experiential education in a 29-day expedition format. This researcher is interested in discovering empirically how programs such as SOLE are applied to student develop and everyday life. For example, did students take away from this expedition a greater appreciation for the outdoors and the environment and a closer connection to the land? And if so, do students exhibit behaviors later in life that suggest a lasting impact from participation in SOLE? Behaviors might include recycling, organic gardening and buying local foods, conserving water, walking as a means of transport to save energy, and increased interest in outdoor activities etc.

Methods

This research is longitudinal and will report results from a sample of n= 59 of student participants. 70 students have participated in SOLE expeditions to New Zealand and Wales during the years 2008, 2009 and 2010; therefore the researcher has reached 84% of the population. The study employed a mixed methods approach utilizing quantitative and qualitative techniques. First, the researcher attended a pre-trip session to administer a pre-test assessing student's self-reported ecological footprint (the perceived impact that humans have on the environment). A post-test ecological footprint was administered during the first month of the semester upon return from the expedition. Delta scores were computed by category. Grouped data has been calculated per expedition. Follow-up focus groups were conducted to add breadth and depth to the information provided by the ecological footprint survey. A content analysis of the data from the focus groups was performed to look for emergent themes. In addition, the researcher conducted participant observation research in the field during the SOLE NZ 2008 in Te Waipounamu, the South Island of New Zealand. Through participation and immersion within one of the SOLE expeditions, she gathered first- hand knowledge of the natural phenomenon as it unfolded. The researcher is currently conducting the final stage of this research. Longitudinal data is being collected from ASU graduates who participated in SOLE 2008, 2009, or 2010 during their undergraduate years at the three-year anniversary mark to ascertain whether or not there remains a lasting impact of the SOLE experience on life after college. Specific questions about what alum remember from their college days and how the consolidation of their learning is evident in behaviors (greening behaviors) is the focus of the interview. Interviews are being

conducted via phone whereby the conversation is audio recorded and transcribed verbatim. A content analysis of the data will be performed to look for emergent themes. Year 2008 will be complete in time for COE 2012.

Results

Ecological Footprint- Pre/Post results

The pre and post-test survey results of the self-reported Ecological Footprint calculation yielded encouraging (and consistent) results for the three years under study. Using a simple Delta calculation (Δ) to compute individual categories, student participants showed a decreased consumption (based upon an average day scenario) in all seven categories <u>except</u> for transportation. Findings are illustrated in the Appendix.

Focus Group Results

A content analysis of the focus groups were conducted to capture the "voices" of the student participants and to provide group interaction to encourage a wider array of thoughts and discussion (Patton, 2002). Member checks were performed for accuracy. Themes that emerged- 1) *a greater respect for the environment-* SOLE trips were pitched as carbon neutral trips. This appears to have an impact on students' perceptions at the time. In addition, students remarked on the earth-centered values of New Zealanders (Kiwis) and the natives from Wales. - "People here (NZ) are more attuned to the natural world- that is refreshing" …"The thing I will take back from this trip the most is a better understanding and appreciation of the environment around me and the global community to which I belong. These are life skills that I will hopefully not forget." "I am taking home with me is the spirit of the people the way in which they respect the land and the animals. There is a great emphasis here on the preservation of culture as well as native species of plants and animals." 2) *Awe inspiring landscapes-* Students consistently commented about the beauty of the landscapes in NZ and Wales. Several students remarked that they had a greater appreciation for the beauty of the Appalachian region as a rest. 3) *Technology as a "burden" of sorts-* Most students did not miss technology and viewed being "plugged in" as a burden. Being plugged in equated with a fast paced society. "Being in the moment is important" 4) *"Leveling" impact of outdoor adventure-* students spoke of a sense of respect for natural/immediate consequences of the outdoors. "I can do anything now" b/c I survived flipping the raft, backpacking in the Southern Alp, adverse wind and weather, etc. 5) *Reflection upon national identity* and need to live more intentionally- "why do we (in the US) stress ourselves out"…"take time to appreciate life more"… "Kiwi's much more laid back…"I am taking away different views and perspectives of totally different cultures. I see that the US is somewhat sheltered in the way that we are causing many world ecological problems and turn a shoulder to it. I see that these people know more about what we aren't doing than what we do." 6) *Valuing the simplicity of life-* need little to survive for a month. "I don't have as much interest in shopping as much anymore…or acquiring more"

Discussion

The results of this study are from one program (with a small sample size); therefore broad generalizations of the findings should be undertaken with caution. However, the longitudinal nature of the study and the triangulation of the methods do add great value. Results of this study are promising and shed light on the importance of education and experience in promoting the values of sustainability and environmental citizenship with college students. The current generations of students are digital natives who are generally "plugged-in". A useful way to gain

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student's undivided attention is to have them unplug for a period of time and reflect upon an experience and culture that is different from life in the USA. Wales and NZ, although English speaking, provide the perfect location to encourage students to reflect upon their values as related to environment.

References

Louv, R. (2008). Last child in the woods: saving our children from nature-deficit disorder. Chapel Hill: Algonquin Books.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd Ed.) Thousand Oaks, CA: Sage.

Rodgers, R.F. (1990). Student Development. In U. Delworth, G.R. Hanson and Associates, Student Services: A handbook for the profession. (2nd ed., pp. 117-164). San Francisco: Jossey- Bass.

Wackernagel M. & Rees W. E., (1996). Our Ecological Footprint: Reducing human impact on the earth. New Society Publishers: Gabriola Island, BC, Canada

Appendix

Note- Water Use includes the length of time spent taking a shower, toilet flushing, and running the water. Food Use consists of meat consumption patterns, the consumption of local and organic foods, composting practices, purchasing processed and packaged foods and the wasting of food. Transportation use looks at how students travel (by bicycle, foot, public transportation, etc.), fuel efficiency of personal vehicle, amount of driving, and the number of flights taken per year. Shelter use explores the size of the dwelling in which they live. Energy use is directed at the temperature in the dwelling in winter months, the use of a dryer, energy efficient appliances, energy efficient light bulbs, and general consumption. Clothing use takes into account how often students change outfits, mend clothing (v. buying new), thrift shop purchases, and the purchase of new shoes. Stuff refers to the trash generated per day, recycling habits, use of rechargeable batteries, the number of electronics owned, and equipment (i.e.- recreation equipment) owned.

Totals for 2008, 2009, 2010 SOLE Footprint
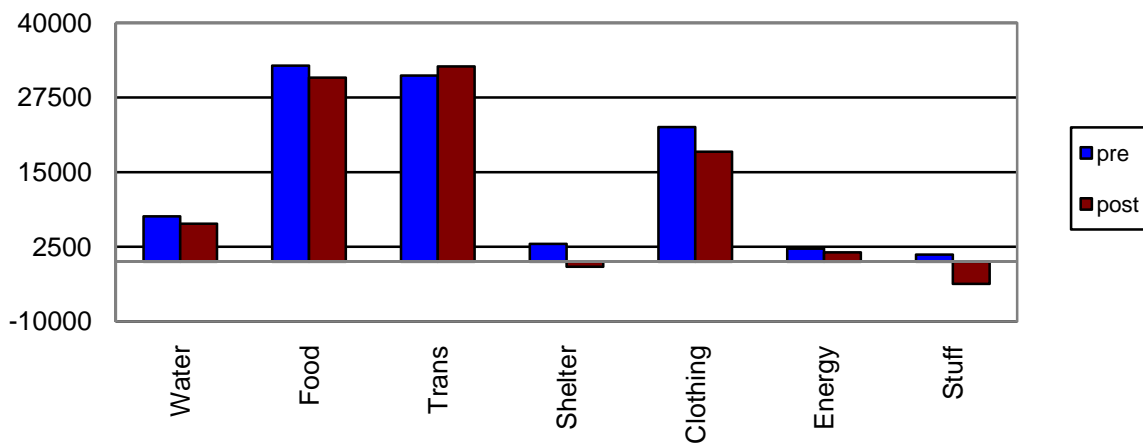
A Survey of Outdoor Educators' Use of Student Writing
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Many outdoor educators include student writing in their curriculum because they believe writing can prompt reflection, resulting in self-discovery; however, few studies have focused on investigating the impact of such writing activities (Bennion & Olsen, 2002; Bennion and Taniguchi, 2010). Additionally, little work has occurred to identify and validate best outdoor student writing practices.

Research suggests experiences often become more meaningful upon further reflection (Taniguchi, Freeman, & Richards, 2005). Writing aids reflection and sharing writing can solidify group relations (Bennion & Olsen, 2002). We believe these effects can result only when outdoor leaders teach, mentor, and promote personal writing for its own sake, not as an assignment. Before the students write they must learn how to write introspectively, be motivated to search within themselves, and express their thoughts through words. During the writing experience, students must be able to focus and give all their attention to the act of writing. Afterward, they need to have the opportunity to share their writing with each other and the teacher to get feedback. This process can help writing be a meaningful experience.

We have gathered data concerning what percentage of outdoor educators we surveyed use writing and how much of a cohesive method they use to elicit and process student writing. This data can serve as a foundation as researchers design future studies to determine how writing facilitates student growth.

Our instrument asks for three kinds of responses: demographic information, numbered responses on a Likert Scale (Writing and/or journaling is an important part of our program), and open-ended, follow-up questions (What is the purpose of writing in your program?). We distributed our instrument through Qualtrics, an online surveying distribution outlet, to a variety of members of organizations who conduct wilderness adventure programs, both therapeutic and non-therapeutic.

The utilized survey instrument listed ranges of attitudes toward various aspects of the writing process. This questionnaire asked participants general information about their type of program, job title, years of experience as an outdoor educator, and years of using writing to facilitate student learning and growth. It also asked outdoor educators' specific purpose for using writing, the kinds of writing they use, and how they measure the success of the writing part of their program. In terms of pedagogy, the instrument asked what kinds of assignments they give, how they motivate students to write, how long they give students to write, how they get students to share writing, and where they have students write (in what environments). We asked for responses on a five point Likert scale concerning how much time their program gives to preparation for writing and to actual writing, how often they have students write, how much freedom students have to choose their own topics, how much they ask students to focus their writing, how much time they spend teaching students to write honestly about themselves, and whether they ask students to redraft writing assignments. We also asked the extent to which they ask students to take emotional risk and write about their own values, whether they exclude writing about intimate or offensive material, and whether they use a balance of open and assigned topics.

We are still in the process of gathering data, but we will estimate from our sample the percentage of outdoor educators who use writing, how they use writing, and how much of a conscious process they use to manage the writing experience.

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When Practice and Research Come Together to Form an Outdoor Education Partnership
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Background

Combining the practice of teaching and research, we sponsored collaboration between future formal educators (ElEd) and nonformal educators (RM) in a "real-life" context. Through a partnership with the U.S. Army Corps of Engineers and a county school system, undergraduate students had opportunities to promote environmental awareness and teach 5th grade students in a natural environment. The intended outcomes from this shared field experience included an understanding of varying perspectives in the teaching of environmental issues and collaboration between these future professionals in informal educational settings. For our project, university undergraduates from two degree programs (Elementary Teacher Education and Recreation Management) collaborated, constructed and implemented EE activities for 5th grade students at a local Corps of Engineers site. In addition to this partnership, research was conducted on both the undergraduates and 5th graders. This presentation will not only describe the outdoor education partnership between the university, county school system and federal park site but also discuss some of our research results.

Literature Review

Active participation in the outdoors, whether part of one's daily routine or as recreational activity, affords an individual with experiences that contribute to a foundational understanding of the natural sciences which can be further cultivated into an interest and respect for the environment. These outdoor experiences, past, present and future must be considered in the developing individual. Bixler and Morris (2000) define environmental socialization (ES) as: " . . . this process involves repeated experiences resulting in practical knowledge of the physical environment, conceptualization of self in terms of the environment in which rewarding actions take place, and the development of primary and ancillary skills and competencies that allow rewarding activities to be carried out efficiently" (p. 67).

Research indicates that repeated experiences in the outdoors build recreational skills and attitudes towards the environment (Scott & Willits, 1989; James, Bixler & Vadala, 2010). From the home, to the school, and across local meeting places, individuals shape and are shaped by the surroundings in which they interact. This environmental socialization plays heavily into one's interests, attitudes, and beliefs.

Purpose of Project

As educators we believe that environmental socialization plays a part in our undergraduate students' efficacy toward teaching in formal and non-formal settings. For the Elementary Education (ElEd) students, formal classroom settings are structured and controlled; taking students outside, on the other hand, often results in anxiety or discomfort. Comparatively, Recreation Management (RM) students feel more comfortable in non-formal settings, yet lack the science content background and pedagogy to guide instruction. For our research project, university undergraduates from two degree programs (Elementary Teacher Education and Recreation Management) collaborated, constructed and implemented EE activities for 5th grade students at a local Corps of Engineers site over the course of a year. This presentation will

describe the partnership between university, county school system and a federal park site, provide preliminary analysis on undergraduate teaching efficacy, and summarizes the impact of the experience on university students.

Methods

This partnership generated three research investigations: 1) undergraduate students' efficacy in teaching science outdoors, 2) undergraduate students' environmental socialization or comfort in outdoors and 3) 5th grade students environmental attitudes.

Thirty-nine teaching candidates and fifty recreation management majors participated in the study during 2010-2011 academic year. As a part of their science methods course, ElEd majors were partnered with Recreation Management majors and asked to develop a 5E's lesson (Bybee, 1997) around state science objectives. Data collected includes a pre/post electronic survey that included items from the New Ecological Paradigm (NEP)by Dunlap, van Liere, Mertig, and Jones, (2000) and the Environmental Socialization (ES) scales based on James, Bixler & Vadala (2010) research. At this time, data analysis is in progress. Research questions include: RQ 1- How does teaching science /EE program add to undergraduate student's efficacy of teaching in the outdoors? RQ 2 - Does teaching science/EE program increase undergraduate student's attitude toward teaching outdoors? The analysis of the surveys will include calculating descriptive statistics (e.g., percentages, mean, Crosstabs) and inferential tests (e.g., independent sample t-tests). Results will be presented.

Seventy 5th graders participated in this study as well. Using the NEP for children and Environmental Socialization scales, Pre & Post-surveys were conducted regarding students' baseline levels of experience in the outdoors. Pre- and post- differences in environmental attitudes and content understanding within and between groups will be analyzed with ANOVA. Overall pre/post differences will be analyzed with paired t-tests. Results will be presented.

Discussion

Fostering these multiple experiences with nature has implications in childhood as well as to future formal and nonformal education professionals. Environmental Socialization competencies might encourage comfort in teaching science content both in and out of the classroom as well as foster an interest in field-based learning or environmental education. Additionally, partnering with formal educators can help recreation or outdoor education professionals increase pedagogy skills.

While the research we conducted may or may not be interesting to the Coalition for Education in the Outdoors participants, our discussion will not only center on a brief overview of the results and their implications but focus on the idea of practice and research coming together to form an outdoor education partnership. Going beyond the research to highlighting this unique partnership between three departments within a university, a county school system and a federal park site to bring about multiple outdoor nature experiences for 5th graders and undergraduate students is important to share with the symposium.

References

Bixler, R. D. & Morris, B. (2000). Factors differentiating water-based wildland recreationists from nonparticipants: Implications for recreation activity instruction. *Journal of Park and Recreation Administration, 18(2)*, 54-72.

Bybee, R. (1997). *Achieving scientific literacy*. Portsmouth, NH: Heinemann

Dunlap,R. E., van Liere, K.D., Mertig, A. G. and Jones, R. E. (2000). Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of Social Issues, 56 (3)*: 425-442.

James, J. J. & Bixler, R. D. and Vadala, C. (2010). From play in nature, to recreation then vocation: A developmental model for natural history-oriented environmental professionals. *Children, Youth, Environments 20(1),* 231-256.

Scott, D., & Willits, F. K. (1989). Adolescent and adult leisure patterns: A 37-year follow up study. *Leisure Sciences, 11,* 323-335.

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Activity-Specific Self-Efficacy and General Self-Efficacy in Outdoor Programming

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Background

Self-efficacy has long been an area of research interest in many fields including outdoor recreation and education. While research supports the idea that participation in outdoor programs will increase general self-efficacy (e.g. Kelley, Coursey, & Selby, 1997; Hattie, Marsh, Neill, & Richards, 1997; Sibthorp, 2003); it is difficult to isolate what mechanism drives these gains. While many program design factors are thought to influence outdoor program outcomes, including the physical environment, relationships with peers, and relationships with instructors (McKenzie, 2003; Sibthorp, 2003; Walsh & Gollins, 1976), the task environment has been explored to a much lesser extent than the others.

Underlying assumptions have been made regarding the relationship between outdoor recreation activities and general self-efficacy. The idea of the transfer of activity-specific self-efficacy to general self-efficacy has been assumed but not supported empirically.

In one of the few attempts to do this, Jones and Hinton (2007) conducted a study on undergraduate students in a wilderness orientation program. Their study, similar to this current study, aimed to examine the relationship between general self-efficacy and activity-specific self-efficacy, but was unable to do so due to low response.

Outside the field of outdoor recreation, there has been substantial research on task specific self-efficacy and general self-efficacy and how they relate to each other (c.f. Smith et al., 2006). For example, Oei, Hasking, and Phillips (2007) found that generalized self-efficacy was a better predictor of alcohol consumption in clinical groups, but task-specific self-efficacy was for the general population. These findings generally do not support Tipton and Worthington's (1984) hypothesis that generalized self-efficacy is a better predictor of success in novel situations, whereas tack-specific behavior is a better predictor when the situation is not.

To date though, there have been no conclusive studies on the association between general self-efficacy and efficacy specific to outdoor activities, referred to in this study as "activity-specific self-efficacy". The findings from Smith et al. (2006) would suggest that any activity-specific self-efficacy gained or lost due to participation in an outdoor recreation program would not impact the participant's general self-efficacy.

The authors hypothesized that participants would experience increases in general and activity-specific self-efficacy as a result of their participation in an outdoor program. Most importantly, we hypothesized that there would be a positive relationship between changes in general and activity-specific self-efficacy.

Pilot Study

Participants in the pilot study were all enrolled in a Bachelor of Science in Outdoor Education program of study. Participants were 14 undergraduate students in a university-level outdoor skills course. Participants took part in a six-day flatwater and whitewater canoe trip as part of the skills course during the spring semester of 2011.

The self-efficacy of the participants was measured using the General Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995) and the Outdoor Recreation Self-Efficacy Scale (ORSE) (Mittlestaedt & Jones, 2008). Students completed the GSE and ORSE in the morning of the first day of the trip (pre-test), in the evening of the final day of the trip upon return (post-test).

On average, participants experienced greater generalized self-efficacy at post-test (M = 34.1, SE = .529) than during pre-test (M = 32.9, SE = .383), $t(12)$ = -2.34, p = .019, r = .56. As with the GSE, the scores on the ORSE reflected that, on average, participants experienced greater activity-specific self-efficacy at post-test (M = 142.0, SE = 5.508) than during pre-test (M = 131.9, SE = 5.196), $t(12)$ = -2.785 p = .010, r = .52.

Change scores were calculated by subtracting the pre-test scores from the post-test scores. There was a moderate positive relationship between the in ORSE and the GSE change scores but the relationship was not significant, $r(11)$ = 0.332, p = .134.

Methods

Additional research is currently being conducted to further investigate the relationship between activity-specific and general self-efficacy in outdoor programs. Several potentially confounding variables were present with the pilot testing. Additional data is being collected in October 2011 with additional controls in place and with a larger number of participants. Participants are lower level students enrolled in a prerequisite course of a Bachelor of Science in Outdoor Education program of study. Students in the course participate in a four-day long backpacking trip. The GSE and ORSE will be used to collect data on the first day of the trip and at the end of the trip. Additional demographic data will also be collected. Students in another university course will be used as a control group.

References

Hattie, J., Marsh, H., Neill, J., & Richards, G. (1997). Adventure education and outward bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research 67*(1), 43-87.

Kelley, M.P., Coursey, R. D., & Selby, P. M. (1997). Therapeutic adventures outdoors: A demonstration for people with illness. *Psychiatric Rehabilitation Journal*, *20*(4), 61-78.

Jones, J. J., & Hinton, J. L. (2007). Study of Self-Efficacy in a Freshman Wilderness Experience Program: Measuring General Versus Specific Gains. *Journal of Experiential Education*, 29(3), 382-385.

McKenzie, M. (2003). Beyond "the Outward Bound process:" Rethinking student learning. *Journal of Experiential Education, 26(1),* 8-23.

Mittelstaedt, R., & Jones, J. (2008). Outdoor recreation self-efficacy: Scale development and reliability. *Research in Outdoor Education, 6*(3), 109-111.

Oei, T. S., Hasking, P., & Phillips, L. (2007). A comparison of general self-efficacy and drinking refusal self-efficacy in predicting drinking behavior. *American Journal of Drug & Alcohol Abuse, 33*(6), 833-841.

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In: J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.

Sibthorp, J. (2003). An empirical look at Walsh and Gollins' adventure education process model: Relationships between antecedent factors, perceptions of characteristics of an adventure education experience, and changes in self-efficacy. *Journal of Leisure Research 35*(1), 80-106.

Smith, S., Kass, S. J., Rotunda, R. J., & Schneider, S. K. (2006). If at first you don't succeed: Effects of failure on general and task-specific self-efficacy and performance. *North American Journal of Psychology, 8*(1), 171-182.

Tipton, R. M. & Worthington, E. L. (1984) The Measurement of Generalized Self-Efficacy: A Study of Construct Validity. *Journal of Personality Assessment*, 48(5), 545.

Walsh, V., & Golins, G. (1976). *The exploration of the Outward Bound process*. Denver, CO: Outward Bound Publications.

Assessing the Relationship between Participant Risk-Taking Through Adventure Recreation and Propensity for Risk-Taking in Everyday Life

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Background

The presence of risk within in the field of adventure recreation is an important attribute for attracting individuals to these activities. Most literature shows that as individuals become more proficient at outdoor / adventure activities their propensity to take higher risks during these activities can increase, subsequently leaving them desiring even more riskier situations (Ewert & Hollenhorst, 1989; Zuckerman, 1979; Llewellyn & Sanchez, 2008).

As adventure recreation is strongly based on the notion and presence of risk involved in the activities, understanding how to master these risky activities can lead to a better comprehension of the effects of introducing participants and moving them safely through the adventure experience. The desire is to use this mastery to a point where the participant is found "pushing the limits" with what appears to be a need to have risk in their lives has been described as "edgework" (Lyng, 1990).

The mastery of these risky activities can lead to a better comprehension of the effects of introductory participation in adventure activities. In addition, participation in adventure activities has been linked with the fostering of personality qualities that can be categorized as "positive change" (Luckner & Nadler, 1997; Schoel, Prouty, & Radcliffe, 1988). Indeed, many problems addressed by adventure recreation professions are concerned with achieving the objective of promoting or enhancing personal growth (Nichols, 2000).

More specific to this study, Breivik (1996) developed research to determine if climbers can take their experience and transfer the risk and personality development associated with it to other areas of their lives, and hoped to expand its scope to the population of experienced adventure guides / facilitators. While personal growth as a consequence of risk taking in adventure activities may be evaluated in terms of positive change, especially in relation to increased self-confidence and self-possession, risk taking in areas outside of such adventures may obviously produce varied results. The focus of this study is to determine whether increased experience in risky situations associated with outdoor / adventure activities leads individuals to have a greater propensity to take more risks in their everyday lives. So the more defined question for this topic is whether there is a connection between the expert adventure guide / instructor and his or her ability to transfer their risk-taking decisions to everyday risk choices (such as taking on more credit card debt, becoming involved in new challenging relationships, having children, or taking out a mortgage on a house)?

Methods

The data collected were utilized to determine whether individuals with more experience in adventure activities have a greater ability to take (and handle) greater risks associated with everyday living. After determining the proper instrument (or combination of instruments) to utilize when approaching this evaluation, it was determined that the medium to make use of was the on-line survey software "Survey Monkey."

Forty-seven professional outdoor guides / facilitators and thirty non-professional individuals ($n = 77$) voluntarily participated in this study via Survey Monkey. All subjects completed a survey instrument including an Experience use history, Sensation seeking scale, and Risk-test 5 to measure the propensity to take risks. Reliability analysis, correlation analysis,

independent *t*-tests, and a one-way ANOVA were conducted between professional guides / facilitators and non-professional individuals.

Results

In the present study, the individuals categorized as professional guides / facilitators were found to be more *Experience Seeking* and *Social Risk* takers. As a result of the present research, it can be inferred that the more risks individuals take in adventure recreation activities the more they may take risks in other areas of their lives. As individuals move through the progression that accompanies the risks associated with adventure activities, they have a tendency to alter the perceptions of those risks (Morgan & Stevens, 2008). This subsequently can result in increased risk-taking in areas of life that go beyond the adventure recreation realm.

To determine whether individuals with more experience in adventure activities have a greater propensity to take greater risks associated with everyday living, an independent *t*-test between professional guides / facilitators and non-professional individuals was performed.

Scale	Professional		Non-Professional		*p*	*t*	Cohen's *d*	Effect size *r*
	Mean	*SD*	Mean	*SD*				
SSS: Boredom Susceptibility	12.93	1.87	13.27	2.33	.516	.653	.16	.07
SSS: Thrill and Adventure Seeking	17.98	1.85	17.60	2.24	.422	.807	.18	.09
SSS: Experience Seeking	17.94	1.55	17	1.72	.016*	2.47	.57	.28
SSS: Disinhibition	16.62	2.04	15.73	2.66	.104	1.64	.38	.18
Total SSS	65.47	4.39	63.60	6.89	.193	1.32	.32	.16
RT-5: Achievement Risk	14.02	1.78	14.30	1.93	.518	.65	.15	.08
RT-5: Intellectual Risk	11.11	1.80	10.70	1.74	.331	.98	.23	.12
RT-5: Economic Risk	10.40	2.39	10.43	2.16	.957	.05	.01	.01
RT-5: Social Risk	21.45	3.11	19.77	3.75	.036*	2.13	.49	.24
RT-5: Physical Risk	21.64	2.55	20.80	4.21	.331	.98	.24	.12
Total Risk Test 5	78.62	6.97	76	9.07	.158	1.43	.32	.16

SSS = Sensation Seeking Scale; RT-5 = Risk Tesk 5
Professional Experienced *n* = 47; Non-Professional Experienced *n* = 30; * p < 0.05

Discussion

This study was an attempt to identify the dimensions in which professional guides / facilitators differ from non-professionals when approaching risks associated with everyday living. As previously mentioned, much of the literature suggests that as participants move successfully through an adventure experience, they will generally expand the limits of how much risk they take in an adventure setting (Sibthorp, Paisley, & Gookin, 2007; Celsi, Rose, & Lehigh, 1993; Ewert & Hollenhorst, 1989). By observing changes in *Experience Seeking* and *Social Risk* scores, this study found a small difference between the propensity for risk-taking in everyday life and increased experience in guides / facilitators of outdoor adventure recreation activities.

This study supports previous research that found that the trait of risk propensity has the potential to change over time and can potentially become an emergent property of the decision

maker (Vong, 2007). Furman, Shooter, & Schumann (2010) suggest that this inclination can lead to a personality trait change and more automated decision making to the degree that the person might not even be aware that he / she is increasing their risk-taking propensity.

As a result of the present research, it can be inferred that the more risks individuals take in adventure recreation activities the more they will take risks in other areas of their lives (Ewert & Hollenhorst, 1989; Lyng, 1990; Celsi, et. al., 1993; Sibthorp, et.al., 2007; Demirhan, 2005; Llewellyn & Sanchez, 2008). This subsequently can result in increased risk-taking in areas of life that go beyond the adventure recreation realm.

References

Breivik, G. (1996). Personality, sensation seeking and risk taking among Everest climbers. *International Journal Sport Psychology, 27*, 308-320.

Celsi, R. L., Rose, R. L., & Leigh, T.W. (1993). An exploration of high-risk leisure consumption through skydiving. *Journal of Consumer Research, 20*, 1-22.

Demirhan, G. (2005). Mountaineers' risk perception in outdoor-adventure sports: A study of sex and sports experience. *Perceptual and Motor Skills, 100, 1155-1160.*

Ewert, A. & Hollenhorst, S. (1989). Testing the adventure model: Empirical support for a model of risk recreation participation. *Journal of Leisure Research, 21* (2), 124-139.

Furman, N., Shooter, W., & Schumann, S. (2010). The roles of heuristics, avalanche forecast, and risk propensity in the decision making of backcountry skiers. *Leisure Sciences, 32,* 453-469.

Llewellyn, D., & Sanchez, X. (2008). Individual differences and risk taking in rock climbing. *Psychology of Sport and Exercise, 9*, 413-426.

Luckner, J. & Nadler, R. (1997). *Processing the experience: Strategies to enhance and generalize learning.* Dubuque, IA: Kendall/Hunt.

Lyng, S. (1990). Edgework: A social psychological analysis of voluntary risk taking. *The American Journal of Sociology, 95* (4), 851-886.

Morgan, C. & Stevens, C. (2008). Changes in perceptions of risk and competence among beginning scuba divers. *Journal of Risk Recreation, 11* (8), 951-966.

Nichols, G. (2000). Risk and adventure education. *Journal of Risk Research, 3* (2), 121-134.

Schoel, J., Prouty, D., & Radcliffe, P. (1988). *Islands of healing: A guide to adventure based counseling.* Hamilton, MA: Project Adventure.

Sibthorp, J., Paisley, K. & Gookin, J. (2007). Exploring participant development through adventure-based programming: A model from the National Outdoor Leadership School. *Leisure Sciences, 29,* 1-18.

Vong, F. (2007). The psychology of risk-taking in gambling among Chinese visitors to Macau. *International Gambling Studies, 7* (1), 29-42.

Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal arousal level of arousal.* Hillsdale, NJ: Lawrence Erlbaum.

Perceptions of Social Support for Therapeutic Wilderness Program Instructors

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Previous research studies have rarely focused on the direct experiences of the field instructors of wilderness therapy programs within or outside of their work environment. While some research has been conducted to examine the perceptions of participants in wilderness-based outdoor programs (Sammet, 2010), relatively little research has focused on the perspectives of outdoor professionals who facilitate such wilderness programs (Kirby, 2006; Marchand et al., 2009). Much of the available academic literature regarding wilderness therapy has prioritized defining common practices (Russell & Hendee, 2000; Russell, 2001), the therapeutic process and why it works in a wilderness context (Russell & Hendee, 2000; Davis-Berman & Berman, 1994), inventorying operating programs in North America (Russell, Gillis, & Lewis, 2008; Russell & Hendee, 2000; Davis-Berman & Berman, 1994a), as well as anticipated and actual outcomes (Russell & Hendee, 2000; Russell et al., 2008). No known research to date has used qualitative methods to directly explore the lived experiences of wilderness therapy field instructors.

Similar to the clients who participate in therapeutic wilderness treatment programs, the field instructors eat the same foods, use similar minimalist camping gear, attempt to survive comfortably in a variety of environments in all seasons and must consistently have a group of people around them. Field instructor "duties include leading an expedition of up to twelve people in a variety of wilderness environments, communicating with a base camp and managing day-to-day living" (Russell & Hendee, 2000, p. 11). The challenges that arise from working in such an atypical, remote environment are not to be minimized. Field instructors who are young, transient, have relatively little concern about financial security or building a career, and who think there are plenty of jobs available in the field, may be unlikely to demonstrate long-term commitment to their jobs. Not surprisingly, they often leave their jobs after a relatively short period of time to pursue a different career in human services or leave the industry completely (Kirby, 2006). For example, individuals employed full time as wilderness therapy field instructors typically remain in their position for only 11.85 months (Marchand, Russell, & Cross, 2009). The field director of one highly regarded wilderness therapy program reported that a front line staff replacement rate of 100% every two years is "common and even expected" (Kirby, 2006, p. 3) and many programs are "attempting to address the problem of field staff turnover" (p. 3). However, little is known about what methods are most effective to deal with this problem in this unique industry.

As a result of a lack of attention in the literature, further research is needed to elucidate the varied challenges that arise for field staff from extended periods of time spent working in demanding, remote environments such as those in which many therapeutic wilderness therapy programs occur. A better understanding of these issues may allow organizations to create beneficial changes in the work environment aimed at reducing the negative impact of these challenges, as well as potentially limiting the intentions of high quality field instructors to leave their jobs. Wilderness therapy program directors often report that instructor recruiting and retention is one of their greatest concerns (Kirby, 2006; Marchand et al., 2009).

Social support, a potentially beneficial outcome from interaction with one's social network, is known to have positive effects on stress prevention, recovery from stress-related complaints and reintegration after a traumatic event or a period of sick leave (Schabracq, Winnubst, & Cooper, 2003). For example, Gehring (2002) examined the factors related to career longevity in female college-level coaches and discovered that each coach who had lasted over fifteen years in the job had received substantial personal and professional support, the majority

of which came from outside the workplace, including friends, mentors and partners. "If you are not supported on a personal level, you can't be yourself. Eventually it wears you down." (Gehring, 2002, p. 202). Similarly, researchers have found when dealing with potentially traumatic and stressful events through one's work that an outlet for one's emotions could have value (Mitchell & Irvine, 2008). Gehring's (2002) study highlights the importance of multiple support systems in the social and emotional dimensions of coaching to the career longevity of women in these demanding jobs. She recommends looking beyond individual and institutional factors to examine the interaction of personal lives and professional lives in order to gain an understanding about why certain women choose to stay in such a career.

In current research, little is known regarding the role of wilderness therapy field instructors' social networks. Therefore, it is worth exploring whether perceptions of accessibility, necessity and use of social support impact the intention to leave one's job as a field instructor in a wilderness therapy program. Through illuminating the area of social support as it is perceived by those working on the front line in wilderness therapy settings, appropriate interventions may be made in the future that result in the retention of high quality employees.

Methods

The authors are in the process of gathering seven retrospective, first-hand perspectives regarding accessibility, necessity and use of social support for this qualitative research study. Detailed individual accounts are being collected in 90 minute, one-on-one interviews from purposefully selected males and females with at least six consecutive months of experience working full time as a field instructor for a wilderness therapy program in Ontario, Canada. The goal of this qualitative study is to provide rich description so that a complex, detailed understanding of social support in this context is possible (Creswell, 2007). A phenomenological theoretical viewpoint has been chosen for this study in accordance with the view that "researchers must shift from examining program outcomes to examining the experiences of wilderness program participants and the meanings they make of their experiences" (Sammet, 2010, p. 154). Therefore, it is argued that a phenomenological approach to this area of research is necessary in order to initiate a similar shift in current research toward examining the lived experience of field instructors. Data undergoing analyses in this study will include all verbatim interview transcriptions and contents of the primary researcher's personal reflexive journal. Prior to the follow up interview, all study participants are invited to review any relevant document data sources (e.g., journals, letters) that are original pieces of writing from the period during which they were employed as wilderness therapy field instructors. During the follow up interview, participants are asked to reference these documents and orally share pertinent sections or entries with the researchers. Data analysis in this study is informed by the core processes of the transcendental phenomenological model (Moustakas, 1994).

The detailed procedure for data analysis will include several steps. First, texts will be read through several times to get a sense of the whole and then the natural "meaning units" of the text will be determined by the researchers in a process known as coding (Kvale & Brinkmann, 2009, p. 205). "Data-driven coding" implies that the data analysis process begins without predetermined codes and codes are developed through readings of the material (Kvale & Brinkmann, 2009, p. 202). Open coding will be done to identify idiomatic phrases and key words that stand out to the researchers during preliminary readings. After identifying and eliminating redundancies, the researchers will cluster these themes into like groups, which when more broadly defined, will illustrate an "essence" of the phenomenon under study (Rafferty, 2010).

Results

Preliminary data have been collected and analyzed. Initial themes that have emerged include: the importance of communication with members of one's social support network, both in and out of the field; the impact of irregular work scheduling in creating a sense of community outside of the work environment; and the inability of people not directly involved in wilderness therapy to understand the challenges faced by front line instructors. Data analysis is ongoing and additional themes will be presented in the poster.

Discussion

Discussion of these results will also be included in the poster. Initial findings from this study may better illuminate the influence of social support networks on the problem of low retention of front line staff working in field-based, wilderness therapy programs.

References

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. (2nd ed.). Thousand Oaks, CA: Sage.

Davis-Berman, J., & Berman, D. S. (1994). *Wilderness therapy: Foundations, theory and research.* Dubuque, IA: Kendall-Hunt.

Davis-Berman, J., & Berman, D. S. (1994a). Therapeutic wilderness programs: A national survey. *Journal of Experiential Education, 17*(2), 130.

Gehring, M. M. (2002). *Career longevity of four women cross country and track and field coaches at the NCAA Division III level.* (Ph. D. dissertation). Retrieved from http://rave.ohiolink.edu/etdc/view?acc_num=osu1022856180

Kirby, A. (2006). *Antecedents of turnover for field staff in wilderness therapy programs.* (Psy.D. dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3204073).

Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing.* Thousand Oaks, CA: SAGE Publications.

Marchand, G., Russell, K. C., & Cross, R. (2009). An empirical examination of outdoor behavioral healthcare field instructor job-related stress and retention. *Journal of Experiential Education, 31*(3), 359-375.

Mitchell, W., & Irvine, A. (2008). I'm okay, you're okay?: Reflections on the well-being and ethical requirements of researchers and research participants in conducting qualitative fieldwork interviews. *International Journal of Qualitative Methods*, 7(4), 31-43.

Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks, CA: SAGE Publications.

Rafferty, Z. (2010). *"Everybody can dance the colour pink": A phenomenological exploration of the meanings and experiences of inclusive arts programs for practitioners.* (Ph.D. dissertation). Retreived from http://hdl.handle.net/10012/5039

Russell, K. C. (2001). What is wilderness therapy? *Journal of Experiential Education*, *24*(2), 70-79.

Russell, K. C., & Hendee, J. C. (2000). *Outdoor behavioural healthcare: Definitions, common practice, expected outcomes, and a nationwide survey of programs.* (Technical Report 26). Moscow, ID. Idaho Forest, Wildlife and Range Experiment Station.

Russell, K. C., Gillis, H. L., & Lewis, G. L. (2008). A five-year follow-up of a survey of North American outdoor behavioural healthcare programs. *Journal of Experiential Education, 31*(1), 55-77.

Sammet, K. (2010). Relationships matter: Adolescent girls and relational development in adventure education. *Journal of Experiential Education, 33*(2), 151-165.

Schabracq, M. J., Winnubst, J. A. M., & Cooper, C. L. (Eds). *The handbook of work and health psychology,* (2nd ed.). Chichester, England: John Wiley & Sons.

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The Influence of Wilderness Leadership Training Courses on Self-Perception and Locus of Control

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Introduction

Adventure-based, outdoor experiential, and wilderness expedition programs have become popular for recreation, leadership training, personal development, and various therapeutic outcomes. An abundance of research exists that evaluates and affirms the notion that experiential based programs have the potential to establish change in participants and groups from a variety of populations and various environmental settings (e.g., Hattie, Marsh, Neill, & Richards, 1997; Hans, 2000; Cason & Gillis, 1994; Sibthorp, 2003). Adventure-based, outdoor experiential, and wilderness expedition programs offer participants a unique form of psychological, educational, emotional, and physical challenges. Through these challenges, participants are encouraged to confront their fears and their self-identity in the context of the wilderness group and potentially gain an improved sense of independent identity. The focus of this study was the Wilderness Education Association's (WEA) Wilderness Leadership Training Courses that provide the opportunity for individuals to develop as leaders via exposure to challenging experiences (WEA info, 2010). There are a variety of influential factors attributing to an individual's development as an outdoor leader; one of these salient factors involves the individual roles occurring within groups (Warters, 1930). This study used these individual roles to evaluate individual's perceptions of their own and their peers' leadership development based on said roles. Locus of Control was a secondary variable used in this study.

This study was designed to enhance participants' understandings of self and peer perceptions during a Wilderness Leadership Training Course (WLTC), through the creation of new instrumentation utilizing previous WLTC research, with a variety of participants in the WEA collegiate course setting. This study was guided by two major theoretical frameworks: Bem's Self-Perception Theory (1972), and Rotter's Locus of Control (LOC) (1966). Both frameworks have long been used in a variety of social-psychological settings, and in this study the theories were applied to Wilderness Leadership Training Courses. The purpose of this exploratory study was twofold: (a) to explore if differences exist between the perceptions of Warter's (1960) individual participant roles that each subject demonstrates in wilderness groups and the perceptions of peers in those same groups; and (b) to determine if student's perceptions of themselves matches the perceptions of their peers, who participated in the wilderness leadership training course.

The review of literature for this study contained an overview of social-psychological theoretical constructs including self-concept (e.g., Gillett, Thomas, & McLaughlin, 1991; Hazelworth & Wilson, 1990; Klint, 1990; Marsh, Richards, & Barnes, 1986; Marsh, Richards, & Barnes, 1987; McDonald & Howe, 1989; Rogers, 1992), self-efficacy (e.g., Bandura, 1977, 1992, 1994, 1995, 1997; McGowan, 1986; Sibthorp, 2003), locus of control (e.g., Hans, 2000; Langser & Anderson, 1987; Nowicki & Strickland, 1973; Rotter, 1966, 1975), self-perception (e.g., Baker, Garst, & Schneider, 2001; Bem, 1964, 1965, 1966, 1972; Harter, 1988), and group processes as it relates to wilderness leadership training courses (Cason & Gillis, 1994; Cockrell, 1991; Ewert, 1988; Gass & Priest, 1997; Kalisch, 1979; Petzoldt, 1984; Warters, 1960). There exists an abundance of research that evaluates and affirms the notion that experiential

based programs have the potential to establish change in participants and groups from a variety of populations and various environmental settings (e.g., Hattie, Marsh, Neill, & Richards, 1997; Hans, 2000; Cason & Gillis, 1994; Sibthorp, 2003). The hypotheses and null hypotheses for this study were as follows: *Self-Perception,* H_1: There will/will not be a difference between the perceptions of participant roles demonstrated in wilderness groups and the perceptions of their peers, in those same groups. H_2: There will/will not be a difference between individuals' pre- and post-test perceptions of themselves. *Locus of Control,* H_3: There will/will not be a statistically significant difference between participants' pre- and post-treatment Locus of Control based on the Wilderness Leadership Training Course.

Methods

This investigation utilized the *Rotter I-E Scale* (Rotter, 1966), and the *Individual Roles within a Group Questionnaire (IRGQ)* designed by this study researcher, as a means of combining both qualitative and quantitative analyses of self-perceptions. The nature of the study was such that following the random selection of courses, each participant was asked to voluntarily participate in the study. Each WEA course was treated as a sub-set of the sample. The data analysis for this study consisted of a mixed methods approach. First, in order to examine the correlation between self and peer rankings, a direct one-to-one comparison was utilized placing most significance on the number one (#1) ranked role of participants and peers, utilizing the Borda Count Method (Tannenbaum, 2007). Second, perceptions were evaluated to determine if there was a difference between individuals' pre- and post-test perceptions analysis of themselves. Locus of control was evaluated to determine if there was a statistically significant difference between participants' pre- and post-treatment locus of control based on the WLTC, using a one-sample, two-tailed proportion test, where the locus of control pre- and post-test Rotter I-E Scale scores were computed and then compared.

Results

The sample consisted of WEA WLTC participants on courses during the spring and summer of 2010, with each WEA course being treated as a subset of the sample. Trends were analyzed over all the sample subsets. The first two hypotheses both determined that there were differences between individuals' perceptions of themselves and the perceptions of their peers. These differences were, however, slight and it was undetermined what caused these differences to occur. Locus of Control was evaluated and found that there were no statistically significant differences between participants' pre- and post-treatment locus of control for each of the individual sub-group findings, as well as the overall findings. Having utilized the Rotter I-E Scale to assess participants' locus of control pre- and post treatments, the Pilot Test A group was the only group to show any statistically significant difference in those pre- and post-treatment tests. The overall LOC hypothesis test also confirmed Pilot Test B, and Brigades 1, 2, 3, and 4 findings, which indicated there was no statistically significant difference. The aim of this research was to apply comparable mixed-method techniques surrounding the exploration of locus of control and self-perception to traditional college age students on wilderness leadership training courses, as well as the development of new instrumentation. Using this methodology, it was shown that there is a positive increase in self-perception related to perceived group roles within WLTC.

Discussion

The differences found indicated that perceptions between individuals and their peers is the focal point that should drive pedagogy in the outdoor field. WEA Wilderness Leadership

Training Courses seek to develop students holistically as Outdoor Leaders, with a key aspect of this development being sound judgment, and this judgment includes the awareness of oneself or the perception of self (Bem, 1972). Further research should be conducted to determine what components of a WLTC influence individuals' perceptions of themselves. Prior research had indicated shifts in LOC and found positive correlations associated with adventure programming. Based on the evidence of this study, locus of control remained a stable construct from pre- to post-course testing and is consistent with Hattie *et al.* (1997), which stated that Locus of Control was considered to be a stable construct. The environment of a 28 day long WLTC is challenging, however, this study indicated that its duration is not long enough to affect a multidimensional construct. Acknowledging that long after the end date of a course, participants continue to synthesize their WLTC experiences, so the utilization of a three-month post- post-test analysis could enhance the overall findings of this study. While studying Locus of Control can help determine how and what change is happening within adventure programming, in order for that change to be evaluated, the criteria would have to be established at the specific multidimensional level and should continue to be studied at this level.

References

Baker, D., Garst, B., & Schneider, I. (2001). Outdoor adventure program participation impacts on adolescents self-perception. *Journal of Experiential Education, 24*(1), 41-49.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191-215.

Bandura, A. (1992). Exercise of personal agency through the self-efficacy mechanisms. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action*. Washington, DC: Hemisphere.

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior*, *4*. New York: Academic Press, 71-81.

Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman and Company.

Bem, D. J. (1972). Self-perception theory. *Advances in Experimental Social Psychology, 6,* 1-62.

Bem, D. J. (1964). *An experimental analysis of beliefs and attitudes*. (Doctoral dissertation, University of Michigan). Ann Arbor, Michigan: University Microfilms, *64*(12), 588.

Bem, D. J. (1965). An experimental analysis of self-persuasion. *Journal of Experimental Social Psychology, 1*, 199-218.

Bem, D. J. (1966). Inducing belief in false confessions. *Journal of Personality and Social Psychology, 3*, 707-710.

Cason, D., & Gillis, H.L. (1994). A meta-analysis of outdoor adventure programming with adolescents. *Journal of Experiential Education, 17*(1), 40-47.

Cockrell, D. (1991). *The wilderness educator: The Wilderness Education Association curriculum guide*. Merrillville, Indiana: ICS Books Inc.

Ewert, A. (1988). Re-education of trait anxiety through participation in Outward Bound. *Leisure Sciences, 10*(2), 107-117.

Gass, M., & Priest, S. (1997). *Effective leadership in adventure programming*. (2nd ed.). Champaign, IL: Human Kinetics Publishers.

Gillett, D. P., Thomas, G. P., Skok, R. L., & McLaughlin, T. F. (1991). The effects of wilderness camping and hiking on the self-concept and the environmental attitudes of knowledge of twelfth graders. *Journal of Experiential Education, 21,* 33-34.

Hans, Tracy A. (2000). A meta-analysis of the effects of adventure programming on locus of control. *Journal of Contemporary Psychotherapy, 30*(1)*,* 33-60.

Harter, S. (1988). Manual for the self-perception profile for adolescents. Colorado: University of Denver.

Hattie, J., Marsh, H. W., Neill, J. T., & Richards, G. E. (1997). Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research, 67*, 43-87.

Hazelworth, M. S., & Wilson, B. E. (1990). The effects of an outdoor adventure camp experience on self-concept. *Journal of Environmental Education, 21*, 33-37.

Kalisch, K. (1979). *The role of the instructor in the Outward Bound educational process.* Three Lakes, WI: Honey Rock Camp.

Klint, K. A. (1990). New direction for inquiry into self-concept and adventure experiences. In J.C. Miles, & S. Priest (Eds.), *Adventure Programming (*p. 163-172*).* State College, PA: Venture Publishing.

Langser, S. J., & Anderson, S. C. (1987). Outdoor challenge education and self-esteem and locus of control of children with behavior disorders. *Adapted Physical Activity Quarterly, 4,* 237-246.

Marsh, H. W., Richards, G. E., & Barnes, J. (1986). Multidimensional self-concepts: The effect of participation in an Outward Bound program. *Journal of Personality and Social Psychology*, *50(*1*)*, 195-204.

Marsh, H. W., Richards, G. E., & Barnes, J. (1987). Multidimensional self-concepts: A long term follow up of the effects of participation in an Outward Bound program. *Personality and Social Psychology Bulletin, 12*(4), 475-492.

McDonald, R. G., & Howe, C. Z. (1989). Challenge/initiative recreation programs as a treatment for low self-concept children. *Journal of Leisure Research, 21*(3), 242-253.

McGowan, Michael L. (1986). Self-efficacy: Operationalizing challenge education. *Bradford Papers Annual*, *1*, 65-69.

Nowicki, S., & Strickland, B. R. (1973). A locus of control scale for children. *Journal of Consulting and Clinical Psychology, 40*(1), 148-154.

Petzoldt, Paul. (1984). *The wilderness handbook*. W.W. Norton and Company, Inc.

Rogers, C. (1992). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting and Clinical Psychology*, *60*(6), 827-32. Retrieved from ERIC database.

Rotter, Julian B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*(1)*, 1-28.*

Rotter, Julian B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Counseling and Clinical Psychology, 43*(1), 56-67.

Sibthorp, J. (2003). An empirical look at Walsh and Golins' adventure education process model: Relationships between antecedent factors, perceptions of characteristics of an adventure education experience and changes in self-efficacy. *Journal of Leisure Research*, *35*(1), 80-106. Retrieved from PsycINFO database.

Warters, Jane. (1960). *Group guidance: Principals and practice.* New York: McGraw Hill.

WEA Info. Retrieved March 8, 2010, from http://www.weainfo.org/.

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An Exploratory Study of Learning Outcomes from an Undergraduate Wilderness Camping and Outdoor Leadership Experience
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This study focused on a seven-day experiential wilderness camping experience in the Boundary Waters of Minnesota with multiple foci. Undergraduate students (n = 17) learned and practiced outdoor living, leadership and teamwork skills including concepts such as communication, respect, trust-building, responsibility, decision-making, and problem-solving. Throughout the course students engaged in principles of environmental stewardship while examining their individual relationships to the natural environment. The trip involved personal reflection and spiritual exploration through journaling and group discussion. This study used a mixed-methods research design to capture quantitative and qualitative data (Creswell, 2003).

The predominant theoretical driver is Astin's Theory of Student Involvement. Astin (1984) stated that the quality and quantity of the student's involvement will influence the amount of student learning and development and that proper involvement demands energy in academic relationships and activities relevant to the college experience.

Data was collected on the last day of the seven-day experience and asked students to evaluate five personal characteristics before and after the trip experience (Table 1). Students were also asked to rate their overall experience on a 1-10 scale with ten being the best; overall experience was 8.81 (SD: 1.33).

Table 1

Personal characteristics of students evaluated after a seven-day wilderness experience

Characteristic	Question
Independence	Have trip experiences helped students learn to depend less on other people for solving problems and for their day-to-day activities?
Responsibility	Have trip experiences helped students learn to be better at taking responsibility for their own actions and mistakes?
Interest in exploration	Have trip experiences helped students be more curious, inquisitive, and eager to learn new things?
Teamwork	Have trip experiences helped students learn to be more effective when working in groups of their peers? Affinity for nature. Have camp experiences helped campers to feel a greater emotional attraction to nature?
Affinity for nature	Have trip experiences helped students to feel a greater emotional attraction to nature?

The following section summarizes post-trip data (Table 2) collected using five scales of the American Camp Association *Camper Outcomes Battery* (ACA, 2009). Each multi-item scale measured students' current perceptions of the respective characteristic as well as the perceived change in each characteristic due one's time spent involved in the wilderness experience. Outcomes are reported as averages and percentages as measured on a 6 point Likert-type scale. Although the instrument has not been statistically tested with college-age students, validity and reliability were robust as tested with 13 to 17-year-olds (ACA, 2009). This administration of the *Camp Outcomes Battery* is the first known use of the instrument with college age students, however was there sufficient support in the research literature to justify use of the instrument

with college-age students (D. Bialeschki, personal communication, June 22, 2009).

Table 2

Post trip data presented as averages and percentages based on 6-point Likert scales

	Independence	Responsibility	Interest in exploration	Teamwork	Affinity for nature
Average before	5.35	5.50	5.40	5.45	4.82
Average change	4.25	4.77	5.13	5.23	5.16
At least a little more true today than before the trip	80%	80%	80%	80%	80%
At least somewhat more true today than before the trip	20%	60%	80%	60%	60%
More true today than before the trip	0%	0%	20%	20%	0%

Students were asked to reflect and list the top three skills they *learned or practiced* that were most important to them and to explain why they were important to them. The top three were 1. Leadership, 2. Communication, and 3. Organization. The following are examples of these.

Leadership
Leadership is important to me because it is a lifelong skill that I will use. People look up to when you are a leader.

Communication
During this trip it was crucial that we all were able to discuss if anything was wrong or if we had something to say. This made me realize how crucial talking to each other is, and how by simply talking to one another most if not all problems can be solved.

This seven-day experiential wilderness trip engaged students in outdoor, leadership and teamwork skills. Data suggests that this experience improved students' overall competencies in Independence, Responsibility, Interest in Exploration, Teamwork, and Affinity for Nature. The reflexive exercises of journaling and group discussions allowed students to identify accomplishments and learned skills such as group leadership, effective communication, and organizational tactics. This research will broaden the discourse on experiential learning in a wilderness setting, student outcomes, and discuss the use of the ACA camper outcomes tool in a non-intended arena.

References
American Camping Association. (2009). Camp youth outcomes battery: measuring developmental outcomes in youth programs. Retrieved from http://www.acacamps.org/research/youth-camp-outcomes-battery.

Astin, A. W. (1984). Student involvement: a developmental theory for higher education. *Journal of College Student Personnel, 22*, 297-308.

Creswell, J. W. (2003). *Qualitative, quantitative, and mixed methods approaches 2nd edition.* Thousand Oaks: Sage.

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Awe as a Catalyst for Enhanced Outdoor Learning
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Awe is an important emotion that may have powerful implications for quality of life. Many leisure researchers have identified the experience of awe in those engaged in outdoor and wilderness experiences (Heintzman, 2006). Scholars in the field of education have also suggested that awe may serve to drive the learning experience and improve the effectiveness of teachers (Myers, 2007). Findings from the current study also suggest that experiences of awe in the outdoors may have important implications for outdoor educators.

Background

Awe has been described as one emotion that may be felt when people are faced with stimuli that are exceptionally beautiful or grand (Adler & Fagley, 2005) or that are vast and require a psychological process of accommodation (Keltner & Haidt, 2003). Researchers and scholars have indicated that awe may have "sweeping effects" (Strumpfer, 2007, p. 502) on those who experience it. Keltner and Haidt (2003) suggested that awe may elicit significant and lasting change and indicated that experiences of awe stand "in the upper reaches of pleasure" (p. 297). Among the many hypothesized benefits of experiencing awe, several have important implications for outdoor education.

Scholars have suggested that the experience of awe toward a subject matter could inspire students and teachers to delve deeper and gain a greater understanding (Myers, 2007) and have recommended that educators make a conscious effort to bring awe into the classroom so as to facilitate a love of learning and to broaden and deepen the skills of the learner (Schneider, 2008). These scholars indicate that a student, for example, who is awe-struck by the complexity of the human form may passionately explore the form through art or through science, thus enhancing their education. Similarly, a student who is fascinated by the vast wilderness may passionately seek to gain a deeper understanding of such.

Ashley (2006) called for a renewal of awe and wonder as a means of developing a valuable and valued approach to environmental education. Arguing that the sanitized images provided by the media and the travel industry do not provide such experiences, the author suggests that a true exposure to nature may facilitate the awe that is needed to understand the world and the environment around us. In order to explore the accuracy of the above claims, the current study sought to explore the functions of awe experienced in the outdoors.

Methods

Because case study research allows for exploration and explanation (Yin, 2003), a collective case study was employed to investigate the mechanisms of awe in the outdoors. Cases were selected using a theoretical sampling method (Patton, 2002) based on research which indicates that people who spend time in the outdoors (Shiota, Keltner & Mossman, 2007) with significant cognitive and psychological resources (Sundararajan, 2009) and those who are spiritually inclined (Halstead & Halstead, 2004) are likely to be prone to experiences of awe. Three cases were selected for the current study: Boy scout leaders from a troop housed in a religious organization, aging adults enrolled in a lifelong learning class teaching outdoor skills, and college students enrolled in a backpacking class. An initial sample of five participants was drawn from each case, resulting in a total sample size of 15 participants.

Semi-structured interviews ranging in length from 44 to 83 minutes (average length = 61 minutes) were conducted to gain an understanding of how participants interpret awe and how experiences of awe impact their life beyond the experience. Interview questions were strategically developed to examine the functions of awe and were written with the assistance of a panel of experts in leisure and positive psychology. Data were analyzed using inductive analysis and a constant comparative method (Denzin & Lincoln, 2000). Open coding was employed to identify relevant topics within the data. Axial coding was then used to structure emerging topics into main themes and sub-themes, which were then synthesized into an overall theme (Strauss & Corbin, 1990). An external auditor reviewed relevant portions of the data and assisted in the formulation and revision of topics and themes. Member checks also helped to ensure the validity and reliability of findings. As per Henderson (2006), additional measures were taken to strengthen the transferability and trustworthiness of the findings.

Results

Among the eight specific categories of benefits identified in the data, four have particular relevance to the field of outdoor education. These are described below.

The first theme indicated that awe in the outdoors facilitates learning. One participant indicated that the experience of awe allows him to "open [his] mind to learning and to seeing." Another said "learning about what you are seeing can enhance [the feeling of awe]." A participant also described when encounters something awe-inspiring in the outdoors he "always learn[s] something new."

The second theme indicated that awe in the outdoors motivates, inspires, and empowers people to act. Speaking of experiences of awe in the outdoors, one participant indicated that, "those things give you inspiration to do something because of this." One mother indicated that such experiences made her change her focus with her children to one of teaching and guiding. She said that "if you are going to teach them that moment is going to be gone so get out and start teaching them about the outside world and not cleaning house."

The final two themes were that awe in the outdoors increases respect for nature and draws one back to nature. One participant indicated that "when you see the creation and see the beauty that's around you, it makes you want to be able to preserve and keep that so that other people can experience it." Another said that awe in the outdoors, "just makes me want to go out and see more and go. If I thought that was a really incredible experience I would go back to there or go to another place and see what was out there."

Discussion

Findings from the current study provide empirical support for many of the hypothesized education-based benefits of awe. These benefits may be particularly relevant for those who facilitate education in an outdoor classroom where students are enveloped in the subject matter and where awe-inspiring objects abound. Participants' indication that awe in the outdoors teaches them about the world, that it inspires them to act, and that it strengthens their relationship with the outdoors, drawing them back to such environments, might be inspiring to outdoor educators and may indeed validate the importance of the work they do. Future research may explore the viability of an awe-based outdoor curriculum, opening the door for further understanding of the role awe may play in outdoor education. Researchers may also seek to implement quantitative methods to further understand the experience and outcomes of awe.

References

Adler, M. G. & Fagley, N. S. (2005). Appreciation: Individual differences in finding value and meaning as a unique predictor of subjective well-being. *Journal of Personality, 73*(1), 79-114.

Ashley, M. (2006). Finding the right kind of awe and wonder: The metaphysical potential of religion to ground an environmental ethic. *Canadian Journal of Environmental Education, 11,* 88-99.

Denzin, N. K. & Lincoln Y. S. (2000). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 1-28). Thousand Oaks, CA: Sage.

Halstead, J. & Halstead, A. (2004). Awe, tragedy and the human condition. *International Journal of Children's Spirituality, 9*(2), 163-175.

Heintzman, P. (2006). Men's wilderness experience and spirituality: A qualitative study. A paper presented at the Northeastern recreation research symposium.

Henderson, K. A. (2006). *Dimensions of choice: Qualitative research approaches to parks, recreation, tourism, sport, and leisure research* (2nd ed.). State College, PA: Venture.

Keltner, D. & Haidt, J. (2003). Approaching awe, a moral, spiritual and aesthetic emotion. *Cognition and Emotion,* 17(2), 297-314.

Myers, P. (2007). Why, why, why? Future teachers discover mathematical depth. *Phi Delta Kappan, 88*(9) 691-696.

Patton, D. Q. (2002). *Qualitative research and evaluation methods.* Thousand Oaks: Sage.

Schneider, K. (2008). Rediscovering awe: A new front in humanistic psychology, psychotherapy, and society. *Canadian Journal of Counseling, 42,* 67-74.

Shiota, M., Keltner, D. & Mossman, A. (2007). The nature of awe: Elicitors, appraisals, and effects on self-concept. *Cognition and Emotion, 21*(5), 944-963.

Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. London: Sage.

Strümpfer, D. J. W. (2007). What contributes to fortigenic appraisal of inordinate demands? Everything!. *South African Journal of Psychology, 37*(3), 491-517.

Sundararajan, L. (2009). Awe. In S. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 86-93). Oxford, United Kingdom: Wiley-Blackwell.

Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed. Vol. 5). Thousand Oaks, CA: Sage.

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A Study of the Perceived Significant Life Effect
of a University Outdoor Education Course

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Background

There is relatively little research on the life significance of outdoor education (OE) programs and courses. One exception is Daniel's (2007) research on the life significance of a university wilderness expedition. According to Daniel (2003), "one of the lingering questions of this type of research is to what extent the lessons are transported into other life contexts and whether these changes are long-lasting or short-lived" (p. 5). Perhaps any behavioral changes after participating in an OE course do not transpire until several years after completing the course. Daniel (2003) and Kellert (1998) asserted that more research should explore the long-term effects of wilderness experiences through retrospective and longitudinal studies. While Daniel's (2003) research examined the life significance of an outdoor wilderness expedition, few studies have explored the life significance of an OE course. Cachelin, Paisley, and Blanchard (2009) used the significant life experience framework to study the outcomes of an OE course where the participants were fourth grade students, the course was a half day, and the students recalled their experiences shortly after participating in the course.

According to Daniel (2003) there is a need for research that isolates the effects of various program components in addition to examining the OE course as a whole. McKenzie (2003) supported this view in stating that there has been considerable exploration of the learning outcomes that students experience in OE courses; however there is a need to understand the less popular topic of how these outcomes are achieved. Thus there is increasing interest in the OE field to move beyond simply focusing on program-specific outcomes to developing more evidence-based models that analyze the influence of specific mechanisms of change (Sibthorp, Paisley, & Gookin, 2007; Ewert & Sibthorp, 2009). Therefore researchers are seeking to establish the processes that link OE course components with outcomes.

In an attempt to fill some gaps in the literature identified in the previous paragraphs, the purpose of the present study is to investigate the significant life effect of a university outdoor education course upon participants more than 20 years after the course, including the effect of the course upon participants' *intrapersonal*, *interpersonal* and *environmental* relationships. Furthermore, the study aims to explore which components of the course had an influence on students' lives. Therefore, the study will look at two aspects of the OE course: the life significance of the entire OE course, and the life significance of its individual components.

Methods

The present investigation is a work in progress that is the first of a two part qualitative-quantitative study. (Please note that collection and analysis of data from the first study will be completed before the conference). The overarching research question for this study is: What is the perceived life significance of a university OE course? Specific questions are: What did participants learn from the course? Did the OE course have a lasting effect on participants, and if so, what was the effect? Did the OE course have an effect on the participants' intrapersonal, interpersonal and environmental relationships? What components, aspects, and activities of the OE course contributed the most to the course being a significant life experience?

The current study is retrospective in nature and according to Chawla (1998) it "takes a

life-span perspective, seeking to understand how experiences that may have occurred 20 or 30 years ago continue to influence people's feelings or behaviour" (p. 385). The study's theoretical framework emerges from significant life experience research in which participants are asked to recount experiences of their own choosing (Tanner, 1980). Significant life experience research often entails asking participants to remember and describe experiences that have contributed to future decisions about environmental protection (Chawla, 1998).

The university OE course investigated in this study is a summer outdoor education course offered since the mid 1970s by a North American university. Normally the course is two weeks in length and held during August. Initially, the course was offered at the university's camp, although more recently it has been offered in the context of a canoe trip. Although there have been minor changes to the course outline, as well as the location and duration of the course, the course purpose and objectives have generally remained the same. The earliest course description for the summer outdoor education course available through the university archives is for the summer of 1979. The course purpose was as follows:

> This course is not oriented towards technical performance but more towards life in a group atmosphere of a summer camp. The major course emphasis is the learning   to [use], and to teach the use of the environment in the summer season. Recognizing that few opportunities are offered to students to permit them to discover their personal fundamental values, in addition, this course is designed as a series of experiences to help everyone develop his own self confidence, his physical capacity, his interior sensibility and his self-respect.

The course content for this summer OE course includes units on: social integration, hebertism, swimming, canoeing, orienteering, sailing, canoe tripping, campcraft workshops, leadership tests, rock-climbing, jog and dip (including 6-mile marathon at end of course), conservation, mountain night hike, solo, sensitivity awareness, and artistic and service projects.

This study involves a purposive intensity sample of approximately 12 alumni of the university who completed the summer outdoor education course more than 20 years ago. The sample is being recruited through the university's alumni directory, notices in the alumni newsletters distributed by both the university alumni association and the faculty in which the course has been offered, former course instructors, and also through the use of the snowball technique. In-depth semi-structured interviews, guided by an interview schedule, are being conducted with the participants. The interview schedule is patterned after Daniel's (2003) study. The interviews are augmented by a photo-elicitation technique where participants are asked to bring any photos they have from their course to the interview and are given opportunity to expand their answers to the interview questions using the photos. The audiotapes are being audio-taped and transcribed manually. Interpretive analysis is being used in which the transcripts are analyzed inductively to seek patterns and themes based on the data.

Results

To be presented at the conference.

Discussion

The findings have the potential to inform OE practice and to demonstrate the need for outdoor education in university settings. In addition to practical implications, the research findings hold promise for contributing to scholarly literature. First, the study seeks to understand the long-term impact of the experience as the research questions will explore the role an OE

experience has on someone's life over 20 years after the experience occurred. Second, the findings have the potential to advance significant life experience research. Third, the study explores an area of research that is still very much in its infancy, that is, the processes that link an OE course, and its components, to outcomes.

References

Cachelin, A., Paisley, K., & Blanchard, A. (2008). Using the significant life experience framework to inform program evaluation: The nature conservancy's wings and water wetlands education program. *Journal of Environmental Education, 40*(2), 2-14.

Chawla, L. (1998). Significant life experiences revisited. *Journal of Environmental Education, 29*(3), 11-21.

Daniel, B. (2003). *The life significance of a spiritually oriented Outward Bound-type wilderness expedition*. (Doctoral dissertation, Antioch University New England, 2003).

Daniel, B. (2007). The life significance of a spiritually oriented, outward bound-type wilderness expedition. *Journal of Experiential Education, 2*(3), 386-389.

Ewert, A., & Sibthorp, J. (2009). Creating outcomes through experiential education: The challenge of confounding variables. *Journal of Experiential Education, 31*(3), 376-389.

Kellert, S. R. (1998). *A national study of outdoor wilderness experience*. Washington, DC: National Fish and Wildlife Foundation.

McKenzie, M. (2003). Beyond the Outward Bound process: Rethinking student learning. *Journal of Experiential Education, 26*(1), 8-23.

Sibthorp, J., Paisley, K., & Gookin, J. (2007). Exploring participant development through adventure-based programming: A model from the national outdoor leadership school. *Leisure Sciences, 29*(1), 1-18.

Tanner, T. (1980). Significant life experiences: A new research area in environmental education. *The Journal of Environmental Education. 11*(4), 20-24.

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The Social Climate in Outdoor Adventure Education: A Context for Understanding Adolescents' Social Motivation

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This study suggests that social achievement goals change in adaptive ways during outdoor adventure education (OAE). These changes relate to specific aspects of the social climate such as group cohesion and task orientation. 'Social climate' is the unique personality of a setting; like people, each setting can be more or less supportive of different outcomes. Focusing on group cohesion and task orientation is related to a focus on developing social competence, which in the classroom has been shown to create a positive orientation towards the social world, setting in motion adaptive beliefs and behaviors that facilitate adjustment in a variety of contexts (Ryan & Shim, 2006, 2008).

The conceptual framework for this research is social achievement goals, which comes from achievement goal theory. Goal theories of motivation focus on types of goals individuals pursue and view behavior as intentionally focused toward the attainment of certain goal (Meece, Anderman, & Anderman, 2006). Social achievement goals operate with the premise that regardless of what an individual is seeking in a social situation, it is likely they desire a feeling of social competence. To obtain this feeling of competence, some individuals are: (a) motivated to develop their social competence by *developing* relations with others, while other individuals seek (b) to *demonstrate* their social competence. Research on this topic has the possibility of yielding a greater understanding of the motivational dynamics and social relationships on outdoor trips.

In this digital era, the need to address and understand social competence and the manner in which adolescents approach human interaction is essential. Successful peer interaction at school has been associated with student engagement, cognitive strategies, problem solving, adjustment to school, academic achievement, and self-regulation (Berndt & Keefe, 1995; Ryan & Patrick, 2001; Wentzel, 1998). Outdoor adventure education (OAE) may provide an effective context for enhancing adolescents' social goal orientations by creating a social climate that supports adaptive forms of adolescent social development.

Methods

The current research is a two-phase mixed methods study building upon exploratory data compiled during a 2010 pilot study.

Phase 1: A sample of 72 students, ages 14-19, completed a 5-day field course run by The White Mountain School, a private boarding high school. Individuals completed self–report surveys at the beginning and end of each course. The Group Environment Scale (GES) (Moos, 2002) and Ryan and Shim's (2006) social achievement goals were utilized to better understand the relationship between the social climate and changes in social motivation. In addition to analyzing quantitative data, six participants were interviewed on two separate occasions, one week apart. Themes in students' perceptions of their trip experience provided insight into how and why the phenomenon of the group social climate in OAE leads to participants' social goals changing. Information was analyzed and used to revise the GES for Phase 2 (Table 1).

Phase 2: Using the revised instrument, a sample of 324 students, ages 12-18, participating in 16-29 day multi-sport adventure experiences in the summer of 2011, run by Adventure Treks, completed post tests about the social climate; with 86 of those individuals completing pre and post tests.

Table 1
GES scales utilized for Phase 2 research on Social Climate
The **Relationship dimension** is measured by:
1. *Cohesion:* The members' involvement in and commitment to the group and concern for friendship they show for one another   2. *Leader Support:* The amount of help, concern, and friendship the leader shows for the members
The **Personal Growth dimension** is measured by:
3. *Independence:* How much the group encourages independent action and expression among members   4. *Task Orientation:* The emphasis on completing concrete, practical tasks and on decision making and training
The **System Maintenance and Change dimension** is measured by:
5. *Order and Organization:* The formality and structure of the group and the explicitness of rules and sanctions   6. *Leader Control:* The extent to which the leader directs the group, makes decisions, and enforces rules

Results

Quantitative results from *Phase 1* demonstrate that within the social climate there is a strong relationship between group cohesion, leader support, task orientation, and order / organization ($p < .01$) yet no relationship to leader control or independence. This short treatment (5 days) did not produce significant changes in social achievement goal orientations. However, phenomenological interviews help to explicate students' perception of the influence of the social climate on outdoor trips and clarify essential attributes of the social climate that facilitated adaptive behaviors (Table 1). Below is the response of James (a 16 year old male) to the question of, "How was your relationship with people on your trip different than at school?"

> *There is not technology, nothing else to distract other people, so in that sense they're kind of diverted from what they would usually do with technology and computers and uhm, anything like that. So they're kind of diverted to actually more kind of communicating with the group and forced to interact. So I think that definitely develops social skills a lot more because you're kind of, you're in the outdoors, you're with a group of people that you're going to be with for about five days, so you might as well get to know them better and try to integrate with what they're doing, what they say.*

Paired Samples *t*-test in *Phase 2* found that Social Development Goal scores are higher after these OAE experiences ($M = 4.32$, $SD = .64$) than prior to the experience ($M = 4.11$, $SD = .70$), $t(86) = -2.57$, $p < .05$. This reveals participants are more motivated toward developing meaningful relationships with others, and their focus is shifting more towards learning, growth, and improvement of relationships. Additionally, a Paired Samples *t*-test found that Social Demonstration-Avoid Goal scores are lower after these OAE experiences ($M = 2.64$, $SD = .87$) than prior to the experience ($M = 2.84$, $SD = .86$), $t(86) = 2.07$, $p < .05$. Essentially, this means that participants are less motivated toward avoidance behaviors in relationships with others. In correlation analysis, change in social development is related to *cohesion* and *task orientation*. In a regression model, *cohesion* is the only significant predictor of changes in social development goals.

Discussion

This study has begun to improve the practical and theoretical understanding of the social climate in OAE and the potential importance of the ability to facilitate a climate that promotes adaptive social motivation. By advancing understanding of the social climate and the social achievement goals of participants in these experiences, new insights into strategies for effectively engaging youth in this context can be gained.

In previous classroom studies, social development goals have been positively associated with several meaningful outcomes such as positive relations, self-acceptance, personal growth, social self-efficacy, and instructor reports of social adjustment. While social demonstration-avoid goals are associated with maladjustment in both concurrent and longitudinal analysis as well as negatively associated with positive relations, self-acceptance, personal growth, and autonomy as well as being positively related to perceptions of loneliness, leading to the conclusion that the social demonstration-avoid orientation constitutes a maladaptive motivational pattern (Mouratidis & Sideridis, 2009; Ryan & Shim, 2006, 2008)..

If OAE programs focus on creating group cohesion while emphasizing completing concrete tasks and the importance of decision making and training, they are likely to influence their participants' social motivation towards more adaptive behaviors. These trips have been shown to shift individual goal orientations toward social development goals and away from social demonstration-avoid goals. Administrators and field instructors should consciously focus on building group cohesion and be sure the task and goals for the program are clearly stated and administered to create a social climate that helps facilitate adaptive outcomes in participants.

References

Berndt, T., & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child Development, 66*, 1312 - 1329.

Meece, J. L., Anderman, E. M., & Anderman, L. H. (2006). Classroom Goal Structure, Student Motivation, and Academic Achievement *Annual Review of Psychology, 57*(1), 487-503.

Moos, R. H. (2002). *A Social Climate Scale; Group Environment Scale Manual; Development, Applications, Research* (Third ed.). Redwood City, CA: Mind Garden, Inc.

Mouratidis, A. A., & Sideridis, G. D. (2009). On Social Achievement Goals: Their Relations With Peer Acceptance, Classroom Belongingness, and Perceptions of Loneliness. *Journal of Experimental Education, 77*(3), 285-308.

Ryan, A., & Patrick, H. (2001). The Classroom Social Environment and Changes in Adolescents' Motivation and Engagement during Middle School. *American Educational Research Journal, 38*(2), 437-460.

Ryan, A. M., & Shim, S. S. (2006). Social Achievement Goals: The Nature and Consequences of Different Orientations Toward Social Competence. *Personality and Social Psychology Bulletin, 32*, 1246 - 1265.

Ryan, A. M., & Shim, S. S. (2008). An Exploration of Young Adolescents' Social Achievement Goals and Social Adjustment in Middle School. *Journal of Educational Psychology, 100*(3), 672 - 687.

Wentzel, K. (1998). Social relationships and motivation in middle school: The role of teachers, parents, and peers. *Journal of Educational Psychology, 90*, 202 - 209.

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Constraints and Facilitators to Sense of Community: A Qualitative Exploration of Participant Trip Journals during Organized Outdoor Group Experiences

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Introduction

Recently, a program of research has demonstrated that perceived sense of community increases over time as a result of participating in organized outdoor group experiences (Breunig, O'Connell, Todd, Anderson, & Young, 2010; O'Connell, Todd, Breunig, Young, Anderson, & Anderson, 2008). Conceptually, sense of community evolved from being solely defined by physical boundaries (i.e., neighborhoods) to include subjective feelings of belongingness within groups (Sarason, 1974). While a qualitative exploration of the emergence of sense of community in organized outdoor group experiences has begun (Breunig, Anderson, O'Connell, Hutson, Todd, & Young, 2011), the authors are not aware of empirical work that specifically explores the perceived constraints and facilitators to the formation of sense of community. If outdoor educators wish to positively influence sense of community, then having a more thorough understanding of how it develops is necessary. Furthermore, researchers have repeatedly called for a more in-depth understanding of what happens within the "black box" of the adventure experience to impact outcomes (Anderson, 2001; Ewert, 1982). The purpose of this study is to understand how participants describe constraints and facilitators to sense of community formation during an organized outdoor group experience.

Conceptual Overview

Two theories frame this study. The first is McMillan and Chavis's (1986) framework on sense of community. McMillan and Chavis suggested sense of community is comprised of four elements: membership, influence, integration and fulfillment of needs, and shared emotional connections. Most outdoor pursuits group experiences provide opportunities for these dimensions to be revealed in unique environments (Ewert & McAvoy, 2000). Prior work has also suggested that some factors detract from (or constrain) sense of community during an outdoor pursuits trip including limited debriefing time, unequal contributions from group members, and "too much challenge" (Breunig, et al., 2010). These findings are generally consistent with Ewert and McAvoy's (2000) suggestion that outdoor trip groups ideally need to find moderation and balance in the stress, demands, challenges, and length of the trip to maintain a functioning group both practically and interpersonally.

The second theoretical basis that informs this study is an ecological approach to leisure constraints and facilitators (see Raymore, 2002). Leisure constraints have been described as "factors that are assumed by researchers and perceived or experienced by individuals to limit the formation of leisure preferences and to inhibit or prohibit participation and enjoyment in leisure" (Jackson, 1997, p. 461). Crawford and Godbey (1987) suggested leisure constraints generally include intrapersonal, interpersonal, and structural dimensions. Alternatively, leisure facilitators are thought to "promote the formation of leisure preferences and promote participation" (Raymore, 2002, p. 39). An ecological approach to leisure constraints and facilitators highlights the areas (interpersonal, intrapersonal, and structural) where both constraints and facilitators overlap while also recognizing that the concepts can stand alone (Raymore, 2002). An ecological approach to leisure constraints and facilitators recognizes that pathways to types of leisure involvement (such as sense of community) are dependent on individuals' contexts and how they negotiate both constraints and facilitators.

Methods

The study employed a mixed-methods approach to data collection, involving 124 students. Questionnaires, focus groups, and journals were used. The focus of this particular paper is on the results from the journal data (124 journals in total).

Participants

Participants were undergraduates from a 4-year comprehensive university enrolled in a 13-day outdoor education practicum (spring of 2008, 2009, 2010). Students spent five days in a residential outdoor education setting, six days on a wilderness canoe trip, and two days back in the residential setting. Students were assigned to one of 21 trip groups designed to be as equivalent as possible in terms of gender, personalities, experience, and skill level. Development of community was one goal, among others, of this outdoor program. Students were asked to complete daily trip journals and were given prompts to help frame their open-ended journal entries.

Data Analysis

Qualitative data analysis was inductive and emergent in nature and guided by the theoretical framework of grounded theory (Bogdan & Biklen, 2003). Data analysis began with one member of the research team reading each journal and using a process of constant comparison and the identification of underlying uniformities, inductively comparing the data, examining the relevant literature, and generating a precursory theory of the relationship between participation in organized outdoor group experiences and perceived sense of community, resulting in the establishment of numerous thematic codes. Two members of the research team then conducted and compared independent analyses to form final thematic codes.

Results

Several themes that highlight ways sense of community was both facilitated and constrained emerged: 1) being challenged; 2) homesicknesses; 3) group membership; 4) intrapersonal dimensions; and 5) place dimensions. In some cases, these themes facilitated sense of community and in others constrained it. It is noteworthy that some participants found ways to "bounce back" from a perceived negative experience turning a constraint into a facilitator. For example, homesickness (a constraint) became a facilitator for one participant when she found a way to share her feelings (through sharing family photos) with other group members.

Discussion

The findings from this study support the notion that sense of community formation is complex. In the context of this study, sense of community formation appears to be a "rollercoaster" experience, which demands negotiation of constraints and maximization of facilitators. Those factors that facilitate sense of community formation (i.e., challenge) can also inhibit or constrain it, depending on the context of the factor. Leaders having an awareness of this fine balance between facilitators and constraints will be better able to help build sense of community by more intentionally managing challenges, group dynamics, intrapersonal dimensions, and environmental factors. The idea that "what can help can also harm" came to life in the journal entries of participants. Raymore (2002), however, cautions that facilitators are not the polar opposites of constraints but are a distinct concept. Removing a constraint does not necessarily facilitate fuller or more meaningful participation. Leaders must pay attention to maximizing facilitators (e.g., frequent debriefing on accomplishment of group goals) and not just minimizing constraints. By continuing to carefully study the inner workings of constraints and

facilitators within outdoor adventure experiences, the complexity of those experiences emerges and the importance of having highly trained and effective leaders (both in terms of activity and interpersonal awareness) is evident.

One practical implication of this study is that the theme of "homesickness" deserves further attention from instructional staff in this particular program (see Thurber, 2005). Understanding homesickness through the lens of leisure constraints and facilitators positions it not as a negative part of the trip, but rather as an important part of the trip that some participants experience more than others. By deepening understanding of concepts such as homesickness as both as a constraint and a potential facilitator, outdoor educators may be in a better position to intentionally build sense of community during organized outdoor group experiences.

References

Anderson, L. (2001). The use of the experience sampling method to understand the wilderness experience. *Proceedings of the Northeast Recreation Research Symposium*, (pp. 92-97). U.S. Forest Service.

Bogdan, R., & Biklen, S. K. (2003). *Qualitative research for education: An introduction to theory and methods* (4th. ed.). Boston, MA: Allyn and Bacon.

Breunig, M., Anderson, L., O'Connell, T., Hutson, G., Todd, S., & Young, A. (2011). Journaling and sense of community: Perceptions of wilderness trip participants. *Proceedings of the Symposium on Experiential Education Research*, (pp. 37-40). Association for Experiential Education.

Breunig, B., O'Connell, T., Todd, S., Anderson, L., & Young, A. (2010). The impact of outdoor pursuits on college students' perceived sense of community. *Journal of Leisure Research*, *42*(4), 551-572.

Crawford, D., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences*, *9*, 119-127.

Ewert A. (1982). *A study of the effects of participation in an Outward Bound short course upon reported self concepts and selected participants*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Ewert, A., & McAvoy, L. (2000). The effects of wilderness settings on organized groups: A state-of-the-knowledge paper. In S.F. McCool, D.N. Cole, W.T. Borrie, and J. O'Loughlin (Comps.), *Wilderness as a place for scientific inquiry* (USDA Forest Service Proceedings RMRS-P-15-VOL-3, pp. 13–26). Washington, DC: U.S. Department of Agriculture.

Jackson, E. (1997). In the eye of the beholder: A comment on Samdahl and Jekubovich (1997), "A critique on leisure constraints: Comparative analyses and understandings." *Journal of Leisure Research*, *29*(4), 458-468.

McMillan, D., & Chavis, D. (1986). Sense of community: A definition and theory. *Journal of community psychology, 14,* 6-23.

O'Connell, T., Todd, S., Breunig, M., Young, A., Anderson, L., & Anderson, D. (2008). The effect of leadership style on sense of community and group cohesion in outdoor pursuits trip groups. In J. Hinton, J. Sibthorp, A. B. Young, & M. A. Anderson (Eds.). *Research in Outdoor Education, Vol. 9*, (pp. 43-59). The Coalition for Education in the Outdoors, SUNY Cortland.

Raymore, L. (2002). Facilitators to leisure. *Journal of Leisure Research*, *34*(1), 37-51.

Sarason, S. B. (1974). *The psychological sense of community: Prospects for a community psychology*. San Francisco, CA: Jossey-Bass.

Thurber, C. A. (2005). Multimodal homesickness prevention in boys spending two weeks at a residential summer camp. *Journal of Consulting and Clinical Psychology*, *73*, 555-560.

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Listen Up! Implications For Outdoor Programs from a National Poll of Teens' Environmental Attitudes

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Background

In *Last Child in the Woods*, Louv (2005) makes a case for the ways modern children are disconnected from the natural world resulting in what he terms "nature deficit disorder". At the same time, we are learning of the importance of these natural experiences. For example, studies (Trust for Public Land, 2005) have shown that nature can be a powerful therapy for depression, obesity, and attention-deficit disorder; increases concentration and creativity; and stimulates a child's senses, which is essential to learning. The Nature Conservancy is also concerned that children alienated from nature will grow into adults with little commitment to conservation and environmental stewardship. The purpose of this paper is to share findings from a national poll of teens conducted by the Nature Conservancy with support from the Toyota USA Foundation. The research questions addressed in this paper are: 1) what are the attitudes of teens toward nature? 2) how engaged in outdoor activities are teens? 3) what encourages/constrains outdoor activities? 4) what demographics contribute to differences?

Methods

A mixed methods approach was used with focus groups serving as the initial data source that informed the development of the online survey. Four focus groups with urban teens representing a stratified mix of racial groups from San Antonio, New York City, Berkeley, and Denver were conducted in May and June 2011 through a bi-partisan effort with two national polling firms. Additional refinement of questions for the online survey administered to a national representative sample of 13-18 year old youth (N=603) in early August was done by a research advisory committee comprised of a variety of researchers and practitioners from youth organizations, academia, and Nature Conservancy staff. This paper will focus primarily on the results from the online survey. These data were entered into SAS and analyzed initially with descriptive statistics with additional analyses still underway.

Findings

Since the focus groups were critical to the development of the survey, a brief report of the findings is helpful to understanding the online survey results. Analysis of the focus group data indicated that teens were regularly spending time outdoors: hanging out with friends, playing sports, or simply getting out of the house. Nearly all valued time outdoors, but relatively few were regularly spending time in more undeveloped natural areas more remote from their urban communities. The biggest obstacles were the effort required to plan an outdoor activity; the perceived discomfort of spending time in nature; and the relatively higher appeal and convenience of indoor activities. However, most focus group participants were open to spending more time in nature, if such activities appeared to be fun, adventurous, new, and unstructured – or if they offered the compensation of a summer job. Peers were the most highly sited influence on spending time in nature.

Analysis of the online data resulted in the following key findings related to the research questions:

Attitudes Toward Nature:

- *American youth are unhappy with the condition of the environment, and lack faith in adults to address it.* A majority of American youth (51%) rate "the condition of the environment and nature" as an "extremely" or "very serious" problem. And they place the blame squarely on previous generations. Nearly three-quarters (73%) agree that "previous generations have damaged our environment and left it to our generation to fix it." And youth lack faith in government to address this or any other major problem – only one-third believe that government leaders are doing a "good job addressing major problems facing our country."
- *There is great potential to mobilize American youth around issues related to the environment and nature.* Roughly 76 percent of youth today strongly believe issues like climate change can be solved if action is taken now. They also think safeguarding important lands and waters should be a priority regardless of any ancillary benefits to humans or the struggling economy. In fact, 86 percent go so far as to say that it is "cool" to do things to protect the environment.

Level of Engagement in the Outdoors:

- *American youth are not spending as much time in nature as they spend on other indoor activities.* Currently 88% of American youth say that they spend time on-line every day, with 69% playing video games or watching TV with that same level of frequency. Both represent far greater proportions than say they do homework or study for school every day (58%).
- *A variety of strategies exist to get youth more involved in nature.* To get youth more actively involved in nature, they want a chance to have fun, would like to turn their schools "inside out", and have a place to escape stresses and fears.

Encouragement/Constraints to Outdoor Participation

- *The data suggest that if youth are given more opportunities to have a meaningful experience outdoors, they will be more likely to value nature, engage with it, and feel empowered to do something about it.* The survey shows that 66% of youth say that they "have had a personal experience in nature" that made them appreciate it more. That subset of American youth is markedly different from those who have *not* had such experiences.
- *The key obstacles to overcome in getting youth to spend more time in nature are a lack of access, a lack of interest, and feelings of discomfort.* Four in five American youth say that the discomfort of nature (bugs, heat or cold, etc.) is a reason they do not spend time in nature. Three in five point to concerns related to access (there is no natural area nearby, or they do not have a way to get there) and almost half say they simply are not interested.

Demographic Differences

- *Barriers for particular subsets of youth exist.* Concern about **gangs and crime** is far more acute for youth who live in big cities, youth of color, girls, and those who are less well-off; concern about **not feeling welcome** among other people in natural areas is seen as more of an obstacle by Asian American youth, by those in big cities, and by those in less well-off households. Obesity is also an issue. Among teens whose body mass index (BMI) classifies them as obese, there are notably lower rates of participation in outdoor activities and less interest in pursuing them in the future.

Discussion

The findings from this study underscores that American youth do not lack for concern about the environment, or desire that it be protected. What they lack are opportunities to engage more meaningfully with nature. The more youth are given the chance to get involved with nature, the

more their instinctive concern about the environment can be solidified and cemented into long-term commitment to protecting it. There is a strong correlation between the frequency of time spend in nature and taking conservation action. The results confirm prior research about the importance of technology to youth, the increased time spent indoors, and the competing challenges for their time. The implications for providers of outdoor experiences for older youth includes considering a different balance between structured/unstructured time in their programs, offering novel/exciting/fun opportunities that enhances social interactions, and exploring *on-going* opportunities to participate in outdoor experiences once they return to their homes and communities.

(References upon request.)

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Memories of Environmental Education: What Functions Do They Serve?

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Introduction

Current models of environmental education (EE) emphasize learning during the EE program, immediate behavior change, and transfer of skills to new environments post-program (e.g. Brody, 2005; Gass, 1999; Hungerford & Volk, 1990). What if the goal of EE was instead to create powerful memories of the experience that could be used for years to come by an increasingly environmentally literate and responsible citizenry? Research in interpretation, museum education, and to a lesser extent, EE has begun to document the episodic and semantic memories that result from such programs (reviewed in Knapp & Benton, 2006). Less is known about how people use these memories. However, emerging psychological research on memory function (use) suggests that autobiographical memories help people understand themselves, develop and maintain friendships, and choose their future actions wisely (Bluck, Alea, Habermas, & Rubin, 2005; Pillemer, 1998). More specifically, memories serve three functions: self, social, and directive. Our study explored memory function as a lens for evaluating program effectiveness in EE and as a possible mechanism for achieving lasting program impacts.

Methods

This study used semi-structured qualitative interviews to gather data from individuals who had previously participated in one of two residential outdoor EE programs. Qualitative methods allow researchers to explore in-depth how a small group of people interpret and make meaning from their experiences (Lodico, Spaulding, & Voegtle, 2010; Merriam, 2009). As such, these methods were well suited to an investigation into memories of an EE experience, perceived impact of such programs on later life, and reflections on the links between memories and lasting impact.

The two research sites were purposely selected based on a variety of criteria including the presence of long-standing programs that could be evaluated in this manner, highly regarded curricula and instruction, programs for late elementary and middle school students akin to many offered nationwide, and contracts with entire school districts giving all students the opportunity to participate regardless of school resources or teacher interest. At Site A, 17 students were interviewed in tenth grade, five years after participating in a fifth grade program. At Site B, 36 students were interviewed in twelfth grade after participating in both fifth and seventh grade programs. All programs were residential, lasted three days and two nights, and focused on the ecology and natural history of the local area.

Interviews were conducted in-person, recorded, transcribed, and coded using Atlas.ti software based on emergent themes (Auerback & Silverman, 2003). Themes and associated quotes were then grouped into categories and considered in relation to the three functions of autobiographical memory found in the literature: self, social, and directive. Data from each site were analyzed separately, then compared.

Results and Discussion

Our data reveal that memories of residential outdoor EE experiences can and do serve self, social, and directive functions post-program.

Similar themes emerged from the data at both research sites, and these themes fit within the larger framework of autobiographical memory function theory. However, as qualitative researchers, our primary interest was in how memory function was manifested in specific settings and how individual program participants recalled and used their experiences.

At both sites, memories served a self function by allowing participants to store and enjoy recalling a good experience from elementary or middle school. In the psychology literature, the two primary self functions of autobiographical memories are to reflect on continuity in one's life and reinforce a sense of accomplishment in relation to one's goals (Conway, 2002; Bluck et al., 2005). Neither function emerged in our data, possibly due to the age of the participants or the instructional focus of the program.

Memories of the programs did serve a strong social function for many of the participants at both sites. Reminiscing with friends about fun times at the EE center was common among interviewees. Most reminisced with other students who attended the program, but occasionally they explained the program or information gained to individuals who had not attended. At Site A this latter use took the form of encouraging others to participate, and at Site B it took the form of sharing information learned. Such reminiscing is in keeping with other research on memory that describes two social functions: maintaining intimacy through shared experiences and sharing prior experiences to help others know you (Bluck et al., 2005)

The data revealed a variety of directive functions for memories of EE experiences. As would be expected, these uses were somewhat aligned with the goals of the specific programs. They were also influenced by the prior experiences of participants. Directive uses included choosing to participate in similar outdoor recreation activities, being more knowledgeable about and appreciative of the local ecology, and engaging in more environmentally responsible behaviors. Such outcomes parallel categories of directive memories discussed in the literature and suggest that the EE experience was an originating event or turning point for some participants (Pillemer, 1998).

Conclusions

Autobiographical memory theory offers a new perspective on how residential outdoor EE might become more successful in meeting its goal of increasing ecological literacy and inspiring pro-environmental behaviors. This framework re-organizes the potential outcomes of an experience from knowledge, attitudes, and behaviors, to self, social, and directive. These new categories correspond well with many of the broader goals of EE and proposed antecedents of pro-environmental behaviors, including empowering individuals, building strong communities, and fostering a sense of place. Further work is needed to determine how programs can (1) create stronger memories that have the potential to serve valuable functions and (2) promote the continued use of these memories.

References

Auerbach, C. F., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. New York: New York University Press.

Bluck, S., Alea, N., Habermas, T., & Rubin, D. C. (2005). A TALE of three functions: The self-reported uses of autobiographical memory. *Social Cognition, 23*(1), 91-117.

Brody, M. (2005). Learning in nature. *Environmental Education Research, 11*(5), 603-621. doi:10.1080/13504620500169809

Conway, M. A. (2002). Sensory-perceptual episodic memory and its context: Autobiographical memory. In A. Baddeley, M. A. Conway & J. Aggleton (Eds.), *Episodic memory: New directions in research* (pp. 53-70). Oxford, UK: Oxford.

Gass, M. A. (1999). Transfer of learning in adventure education. In J. C. Miles & S. Priest (Eds.), *Adventure programming* (pp. 227-234). State College, PA: Venture.

Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental education. *Journal of Environmental Education, 21*(3), 8-22.

Knapp, D., & Benton, G. M. (2006). Episodic and semantic memories of a residential environmental education program. *Environmental Education Research, 12*(2), 165-177. doi:10.1080/13504620600688906

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice* (2nd ed.). San Francisco: Jossey-Bass.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco: Jossey-Bass.

Pillemer, D. B. (1998). *Momentous events, vivid memories*. Cambridge, MA: Harvard University Press.

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Connection with Nature: The Effects of Organized Camp Experiences on Children's Environmental Attitudes

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Background and Objectives

For the last 40 years researchers have studied what influences and predicts a person's feelings of connection with nature and pro-environmental attitudes and behaviors. Research results have been mixed, due in part to inconsistency in defining the constructs studied, as well as the wide array of instruments used to collect data. Nonetheless, research supports a broad theory that outdoor recreation (Dunlap & Heffernan, 1975; Palmberg & Kuru, 2000; Teisl & O'Brien, 2003; Thapa & Graefe, 2003; Sandell & Öhman, 2010), outdoor education (Bacon, 1987; Kruse & Card, 2004; Martin, 2004; Stern, Powell, & Ardoin, 2008; D'Amato & Krasny, 2011; Johnson & Manoli, 2011), and early-life experiences (Tanner, 1980; Palmer, 1993; Ewert, Place, & Sibthorp, 2005) all have positive effects on one or more of these constructs. To date, however, the literature has not provided conclusive insight into what helps children care about the environment and which type of activities or programs may serve to help them connect with nature and/or increase their pro-environmental attitudes and behaviors.

Children are an important part of the solution to environmental and ecological problems because their attitudes and behaviors are generally carried over into adulthood (Basile, 2000). In light of the present disconnect of children from nature (Louv, 2005), cultivation of children's love of and connection to nature, and their consequent environmental concern, is essential. This study examined how children attending two different summer camps responded to questions related to connection with nature ("Connection"), environmental stewardship ("Stewardship"), interest in environmental learning and discovery ("Discovery"), and knowledge and awareness of environmental and ecological issues in natural area settings ("Awareness"). In addition, early-life experiences in the outdoors were considered as a possible predictor of pro-environmental responses from attendees at both camps. Both camps were situated in natural outdoor settings but only one of the camps engaged children in intentional environmental education programming.

Research Design and Methodology

This quasi-experimental study utilized a non-equivalent comparison group design (Shadish, Cook, & Campbell, 2002). Pre-and post-camp experience questionnaires adapted from Powell, Stern, and Ardoin (2006) and Place (2000) were administered to elicit information in order to address the following research questions: (1) Is participation in a summer camp in a natural setting *with* intentional environmental education programming (designated as Camp A) associated with an increase in children's Connection, Stewardship, Discovery, and Awareness? (2) Is participation in a summer camp in a natural setting *without* intentional environmental education programming (designated as Camp B) associated with an increase in children's Connection, Stewardship, Discovery, and Awareness? (3) Is there a difference in the amount of change in Connection, Stewardship, Discovery, and Awareness between the children attending Camp A and the children attending Camp B? (4) Are early-life outdoor experiences a predictor of increased Connection, Stewardship, Discovery, and Awareness for children attending both camps? The questionnaires were administered to children attending each camp upon their arrival and at the end of each camp session.

The population for the study consisted of 166 children attending summer camp at an environmental education center (Camp A, 103 children) and a traditional outdoor adventure camp (Camp B, 63 children). Camp A is located within the boundaries of a National Park and Camp B is located in the same region, but outside the National Park boundaries. Each camp serves youth aged 9 through 17 and offers a variety of outdoor activities including wilderness hikes, river and stream swimming, survival skill activities, campfire programs, and overnight camping trips away from the camp facilities. In addition, Camp A offers environmental education programs led by a staff of teacher/naturalists. Camp B does not offer intentional environmental education programming. The study sample included the entire population of attendees at each camp session studied and was taken as a census.

Data Analysis and Results

The data collected is being analyzed using statistical tests appropriate to a nonequivalent independent group design, including repeated measures ANOVA (to compare attendees' pre- and post-visit levels of the four dependent variables,Connection, Stewardship, Discovery, and Awareness, within each camp), multivariate ANOVA (to compare the pre-visit and post-visit responses of Camp A attendees with the pre-visit and post-visit responses of Camp B attendees for each of the four dependent variables), and OLS regression tests (to evaluate and predict the relationship between early-life experiences and the children's levels of each of the four dependent variables. Significance levels for multiple tests will be corrected where appropriate.

The study sample comprised students who self-selected to enroll in the camps; participants were not chosen by random selection. Thus, results may not be generalizable to the total population of children attending outdoor recreation summer camps.

References

Bacon, S. (1987). The evolution of the Outward Bound process. Greenwich, CT: Outward Bound

Basile, C. (2000). Environmental education as a catalyst for transfer of learning in young children. *Journal of Environmental Education, 32*(1), 21-27.

D'Amato, L., & Krasny, M. (2011). Outdoor adventure education: Applying transformative learning theory to understanding instrumental learning and personal growth in environmental. *Journal of Environmental Education, 42*(4), 237-254. doi10.1080/00958964.2011.581313

Dunlap, R. E., & Heffernan, R. B. (1975). Outdoor recreation and environmental concern: An empirical examination. *Rural Sociology, 40*(1), 18-30.

Ewert, A., Place, G., & Sibthorp, J. (2005). Early-life outdoor experiences and an individual's environmental attitudes. *Leisure Sciences, 27*(3), 225-239.

Johnson, B., & Manoli, C. (2011). The 2-MEV Scale in the United States: A measure of children's environmental attitudes based on the theory of ecological attitude. *Journal of Environmental Education, 42*(2), 84-97. doi: 10.1080/00958964.2010.503716

Kruse, C. K., & Card, J. A. (2004). Effects of a conservation education camp program on campers' self- reported knowledge, attitude, and behavior. *Journal of Environmental Education, 35*(4), 33-45.

Louv, R. (2005).*Last child in the woods*. Chapel Hill, NC: Algonquin Books of Chapel Hill.

Martin, P. (2004). Outdoor adventure in promoting relationships with nature. *Australian Journal of OutdoorEducation, 8*(1), 20-28.

Palmberg, I. E., & Kuru, J. (2000). Outdoor activities as a basis for environmental responsibility. *Journal of Environmental Education, 31*(4), 32. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=3522093&site=ehost-live

Place, G. (2000). *Impact of early life outdoor experiences on an individual's environmental attitudes.*Unpublished doctoral dissertation, Indiana University, Bloomington

Powell, R. B., Stern, M. J., & Ardoin, N. (2006). A sustainable evaluation framework and its application. *Applied Environmental Education and Communication, 5*(4), 231-241. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ884893&site=ehost-live;http://www.informaworld.com/openurl?genre=article&id=doi:10.1080/15330150601059290

Sandell, K., & Öhman, J. (2010). Educational potentials of encounters with nature: Reflections from a Swedish outdoor perspective. *Environmental Education Research, 16*(1), 113-132. doi:10.1080/13504620903504065

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference.* New York: Houghton Mifflin Company.

Stern, M. J., Powell, R. B., & Ardoin, N. M. (2008). What difference does it make? Assessing outcomes from participation in a residential environmental education program. *Journal of Environmental Education, 39*(4), 31-43.

Tanner, T. (1980). Significant life experiences: A new research area in environmental education. *Journal of Environmental Education, 11*(4), 20-24. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ231008&site=ehost-live

Thapa, B., & Graefe, A. (2003). Forest recreationists and environmentalism. *Journal of Park and Recreation Administration*, *21*(1), 75–103.

Tiesl, M., & O'Brien, K. (2003). Who cares and who acts? Outdoor recreationists exhibit different levels of environmentalconcern and behavior. *Environment and Behavior 35*(4), 506-522. doi: 10.1177/0013916503035004004

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Understanding the Contribution of Wilderness Based Educational Experiences to the Creation of an Environmental Ethic in Youth

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With environmental crises such as global climate change becoming more urgent, understanding humans' relationships with the natural world becomes imperative. An environmental ethic is an integral aspect of this relationship. An environmental ethic is defined as "the moral relationship of human beings to, and also the value and moral status of, the environment and its nonhuman contents" (Brennan & Lo, 2009). These morals and values are utilized in the decision-making processes that dictate how humans interact with the natural environment (Hungerford & Volk, 1990; Hay, 2005). Research suggests that individuals with positive attitudes and values towards the environment are more likely to engage in pro-environmental behavior, or "behavior that consciously seeks to minimize the negative impact of one's actions on the… natural world" (Kollmuss & Agyman, 2002). If outdoor educators and their organizations are to implement programs that are effective in fostering positive change in the pro-environmental behaviors of their clients and students, there must be a greater understanding of how an individual's environmental ethic is shaped and, ultimately, utilized.

Wilderness experiences can contribute significantly to the formation of an individual's environmental ethic. Significant Life Experience (SLE) research seeks to understand the nature of experiences that impact one's environmental ethic. Studies have asked participants to dissect those experiences that impacted their involvement in environmental action (Chawla, 1999; Palmer, 1993; Palmer, Corcoran & Suggate, 1996; Tanner, 1980). Recurring themes within these narratives, such as time spent outdoors, influential people (mentors, instructors and friends), and educative experiences (Chawla, 1998; James, 1993; Palmer, 1993; Peterson, 1982; Peters-Grant, 1986; Sward, 1996) are remarkably similar to characteristics intrinsic to wilderness-based educational experiences, such as National Outdoor Leadership School (NOLS) courses (NOLS, 2011). Specifically, a 30-day NOLS course incorporates several qualities of significant life experiences. Instructors provide mentorship, role modeling, and facilitation of discussions surrounding environmental ethic and the course itself provides uninterrupted time outdoors. Further, NOLS' incorporation of Leave No Trace curricula offers educational aspects to the student's experience. These consistencies suggest that NOLS courses may act as significant life experiences and, therefore, have a significant impact on the formation of students' environmental ethics.

However, it is possible that 30-day courses may not serve as significant life experiences. The majority of the research conducted on the formation of environmental ethic has focused on retrospective analysis of a wide range of experiences, but does not address how and if wilderness programs specifically designed to foster an increased environmental ethic contribute to its formation. Outcome-focused programs (such as NOLS courses) may entail elements inconsistent with significant life experiences (Chawla 1998; Arnold et al, 2009). According to much of the SLE literature, time spent outdoors is most often reported as a formative experience when it is unstructured (Peterson, 1992; James, 1993). In contrast, programming in wilderness settings may be too structured to provide students with an experience that fulfills a formative role. Much of the research also suggests that many self-identified significant life experiences involve some form of repetitiveness: open space was consistently available or a role model was a semi-permanent fixture in everyday life (Chawla, 1998; Palmer, 1993; Tanner, 1980). NOLS courses

are usually no more than a month long and are, typically, not repeated multiple times, which generates doubts regarding the ability of participants to internalize their experience to the same extent as a significant life experience. A better understanding of the qualities of wilderness-based programs and whether participants utilize their experiences to construct their environmental ethic will assist these programs in designing curricula that better fits their specific outcomes. Therefore, the purpose of this study was to deepen our understanding of the ways in which a wilderness-based educational experience may impact the development of an environmental ethic in youth. In addition, we sought to identify the extent to which such a wilderness experience was congruent with the SLE literature.

Method

Data were collected from a census of NOLS students via the Course Quality Survey (CQS) ending 9/1/11. The CQS is administered at the end of each course and consists of likert-type questions addressing course factors and satisfaction. In addition to these, students were asked the open-ended question, "Did your NOLS experience make an impact on your environmental ethics?" If yes, students were asked to provide a short explanation. Responses varied from a word to several sentences. To control for as much variance in the experience as possible, data were delimited to responses from students on 30-day courses (rather than semesters or courses shorter than 30 days). A total of 771 students took part in the study, providing 110 "No" responses, 653 "Yes" responses, and 8 offering no response at all. Of the "Yes" responses, 52 provided no explanation and 34 provided explanations that were unrelated to the question. This left a total of 567 students who responded affirmatively and provided useful detail. These responses were coded into 28 general themes through open coding. After initial coding was completed, 12 themes were generated through axial coding. This type of coding allowed the researchers to make connections between categories and more strictly develop category definitions (Lindlof & Taylor, 2002). In cases where multiple themes were addressed within a single student's response, the response was placed into the theme that was mentioned first. Following the round of axial coding, eight of the 12 themes were excluded from the study as they did not represent at least 5% of the total sample and were considered to be comparatively idiosyncratic. Ultimately, then, 504 responses were placed into a total of seven themes for the purpose of this study.

Results

Figure one shows the seven themes that were created: 1) "Affective connection" represented **a** newly formed relationship with the natural world through direct experience; 2) "Increase in cognitive awareness" showed that students gained information that resulted in a greater understanding of the natural world; 3) "Transfer of environmental ethic" was defined as the intention to apply a form of minimum impact in the student's everyday life back at home; 4) "Recognition of one's personal influence on the environment" referred to the consideration of human's impact on the natural world; 5) "Leave No Trace, no motive" represented responses that addressed minimum impact principles but did not provide explanation or intention; 6) "Leave No Trace with a motive" symbolized the learning of minimum impact principles with an intent to continue to utilize them in wilderness settings; and 7) "Increase in perceived value of the environment" was defined as a realization of a greater worth assigned to the natural world.
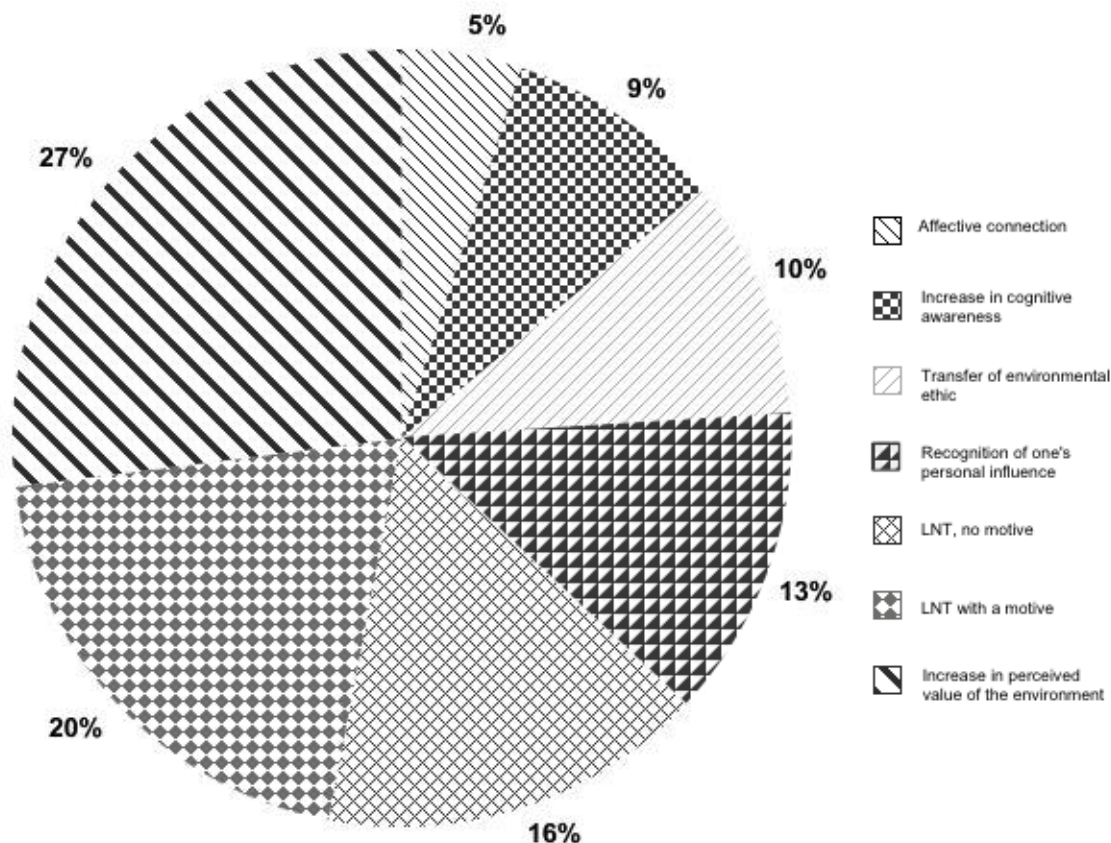
Figure 1. **Response themes by percentage of total sample size.**

Discussion

The purpose of this study is to deepen our understanding of the ways in which a wilderness-based educational experience may impact the development of an environmental ethic. Data from this study suggest that NOLS courses do have a positive impact on environmental ethic. Students report that they are more aware of how the natural world works, have an increased self-awareness related to sustainability, and believe they learned how to apply Leave No Trace skills in their lives beyond the program. We also sought to identify the extent to which NOLS courses were consistent with the SLE literature. These courses do, in fact, appear to explicitly include some characteristics similar to significant life experiences. Both themes addressing LNT, as well as "Increase in cognitive awareness," all suggest elements of an educational experience. "Affective connection" is directly dependent on having time spent outdoors, which is also an integral aspect of SLE. Perhaps, then, the SLE framework may be useful for understanding the impact of wilderness-based courses on participants, particularly in terms of environmental ethics.

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Introduction

The Enviros Wilderness School Association is a charitable, non-profit community of people committed to enhancing the quality of family life in Alberta by offering a variety of experiential-based programs to assist children, youth, adults and families in learning and developing skills that foster independence. The Shunda Creek program is one of several programs offered by Enviros, and an adventure-based wilderness treatment located 200 miles north of Calgary outside of Rocky Mountain House, Alberta, Canada. This ten-bed program serves males ages 18-24 and focuses on addiction-based issues that require residential treatment and support as determined by Alberta Health Services. The Shunda Creek program includes family involvement in its addiction treatment process. The goals of the program are to strengthen the family that is supporting the young adult in treatment while providing employment and academic support and resources to create lasting positive changes. The program accomplishes these goals through the use of outdoor education and community-based experiences.

The treatment approach is best described as "eclectic" fusing cognitive behavioral treatment, Motivational Interviewing, social skills training, behavioral contracting, and core tenets of group therapy by the leadership team at Shunda Creek. The use of adventure at Shunda Creek is unique for a few reasons in that it is a constant and evolving tool that is woven into the 90-day program. There is no set schedule, where clients rotate in an out of the field on a periodic basis. They also do not go out in large groups (like the traditional "10-man" group brought to North America by Outward Bound in the 1960s). When a client feels like they are ready, a trip is planned and organized with a staff member and one or two clients and two staff will go out on a three- to five-day expedition with planned goals, themes and foci. These may be a water-based canoe trip, or a backpacking trip in the nearby Northern Rockies. At the completion of the adventure experience they return to camp and process their thinking with the on-going group and the clinical staff.

The Resiliency Questionnaire, developed by Resiliency Canada (see www.resiliencycanada.ca) was used by Shunda Creek to monitor outcomes associated with program participation. Resiliency can be defined as a person's ability to adapt successfully in the face of high stress or adversarial conditions. In recent years, the focus of research on factors that affect resiliency has shifted from examining the presence of risk factors to more carefully examining the role that protective factors play in facilitating resiliency in individuals (Rutter, 1990). Protective factors can range from internal assets, like a strong sense of self, to external assets, like living in a safe neighborhood and having strong adult role models present. The adult version of the questionnaire was use for this study to assess the degree to which resiliency was impacted due to participation in the 90-day Shunda Creek treatment program. The instrument included 123-items that were given to each individual entering the program and terminating the program due to completion of the treatment objectives. Existing data completed by each client since the program's inception in 2010 was used to evaluate the relative treatment outcomes associated with the 90-day intervention.

Data Analysis Procedures

The first step in analyzing the data was to import raw pretreatment and posttreatment scores into the Statistical Package for the Social Sciences (SPSS). The data set was then linked to existing socio-demographic information on each participant by a client identification code (all identifying information was removed from the data provided to us as evaluators). Basic descriptive statistics were calculated for all demographic variables, including age, ethnicity, current school and work participation status, and the types of home support available.

All items for the questionnaire related to *internal assets* were used in this analysis. These included the following constructs developed by Resiliency Canada: 1) social sensitivity and empathy, 2) empowerment, 3) self-control, and 4) cultural awareness. The reasoning and justification for this are that the Shunda Creek program, as residential treatment, has very little ability to directly impact external factors associated with the instrument. Therefore, this analysis focused on internal assets to gain an initial understanding of the program's impact on these assets.

The instrument used by Shunda also contained several other factors that were included in addition to the above factors. These included constructs such as flexibility, empathy, and reflection. Because these items were added to the original instrument, and because we were only selecting those items that evaluated internal assets, principal component analysis was conducted with the pretreatment items (N= 43) to determine their inherent structure and to develop constructs embedded in this data set. A total of eight factors emerged from the data that reflected these internal assets which explained 62.93% of the total variance. These factors were then scored and computed and a series of t-tests were run on pre- and post-treatment data to examine change in the factors as a result of participation in the program.

Results

A total of 53 male participants provided data in the database that entered Shunda Creek to receive treatment since the program's inception in 2010. The average age of the participants is 20.8 years, and approximately 20% are of Aboriginal descent, while over three-quarters are not. The vast majority (90%) were not currently in school at the time of enrolling in Shunda Creek. At discharge from treatment, each client was asked the degree to which they were satisfied with various aspects of their treatment process. Treatment satisfaction is an important indicator of positive treatment outcome, and has been shown to be positively correlated with substance use abstinence at follow-up assessments (Winters, 1999). Results showed high satisfaction felt by respondents, including feeling heard, understood and respected (64.7% strong agree), feeling that treatment approach was a good fit (79.4% strongly agree), feeling like they worked on and talked about what was meaningful for them (88.2% strongly agree) and the receiving overall service and support (76.5% strongly agree). Over 90% of respondents either strongly agreed or agreed with each of these elements of treatment satisfaction, indicating that the treatment model and approach was suitable to their treatment needs.

To assess treatment outcome, change scores for 32 clients who had completed treatment were calculated using a pair-wise t-test to determine the significance of the change as well as the relative effect size for each of the eight factors (see Table 1). The effect sizes observed based on changes in each of the factors were considered "large," with the exception of *Factor 3-Empathy*. A total of five factors showed effect sizes greater than 1.0, with *Factor 1-Self Care* showing the most significant changes with an effect size of d=1.76.

Conclusions

The following conclusions were developed based on this initial examination of the Shunda Creek program: 1) Young adults with substance use problems constitute a high risk population due, in part, to their ability to leave treatment at any point in time. They remain in treatment exclusively by their own choice; 2) Treatment satisfaction with Shunda Creek's program is evident in the data provided and reported in this evaluation; 3) Positive treatment outcomes exist on variables measuring internal assets when comparing pre-treatment and post treatment scores. Additionally initial effect sizes are high and encouraging for treatment effectiveness; 4) Current data make it difficult to ascertain which elements of treatment had the strongest effect on treatment outcomes – especially what impact the adventure therapy elements have on the effectiveness reported. 5) There is a need for a mixed method (qualitative and quantitative) assessment of the process, particularly the adventure therapy aspects, to better understand the role AT plays in conjunction with the rural and isolated residential living, therapeutic community, group and individual therapy process.

References

Rutter, M,. (1990) Psychosocial resilience and protective mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), Risk and protective factors in the development of psychopathology. New York: Cambridge University Press. pp. 181-214.

Winters, K. C. (1999). Treating adolescents with substance use disorders: An overview of practice issues and outcomes. *Substance Abuse*, 20(4), 203-225.

Table 1. Average scores at admission and discharge and results of pairwise t-tests, associated effect sizes (Cohen's d), and the 95% Confidence Interval for the effect size for each factor presented in descending order from larger to smaller effect sizes.

	N	Pre (SD)	Post (SD)	Effect Size (d)	95% CI
Factor 7-Self Care (Three Items) The belief in their ability to practice behaviors related to physical and emotional self-care.	32	3.57 (.75)	4.66 (.47)	1.76	1.62 - 1.92
Factor 2-Goals and Planning (Four Items) The ability and desire to set goals and plan for the future.	32	2.58 (.84)	3.59 (.41)	1.51	1.39 - 1.71
Factor 1-Self Control (Nine Items) The ability to control one's feelings and make decisions about their future.	32	1.43 (.47)	1.99 (.23)	1.49	1.40 - 1.58
Factor 5-Identifying Resources (Four Items) The ability to identify supporting resources in the communities in which they live.	32	3.73 (.70)	4.51 (.41)	1.33	1.19 - 1.47
Factor 8-Reflection and Purpose (Two Items)	32	3.92 (.96)	4.83 (.27)	1.31	1.14 – 1.48

The ability and desire to reflect on their purpose in life.					
Factor 4-Self Efficacy (Four Items) The belief in one's ability to accomplish things that are important.	32	4.16 *(.80)*	4.69 *(.37)*	.86	.72 - 1.01
Factor 3-Empathy (Five Items) The degree to which others feelings and concerns are important.	32	4.38 *(.51)*	4.66 *(.43)*	.61	.49 - .72

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Intended Transference of Learning:
An Investigation of the Outward Bound Wilderness Experience
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Background

Wilderness experience programs continue promote student transfer of learning as a key assumption. Researchers have identified a need to examine the benefits and outcomes of the entire wilderness experience program (Holman & McAvoy, 2005) and to investigate specific program components and their influence on overall participant outcomes (Ewert & McAvoy, 2000). Furthermore, interest has been growing regarding the degree to which these benefits and outcomes are transferred to the participant's everyday life and whether these changes are long-lasting (Sibthorp, Furman, Paisley, Gookin & Shumann, 2011; Sibthorp, Paisley, Furman, & Gookin, 2008; Whittington, 2011).

The transfer of learning framework, the process by which a person utilizes what is learned in one setting or situation in subsequent situations, informed this study (Gass, 1999). Transfer of learning has been a primary goal of many wilderness programs but is often difficult to study. While some retrospective studies (e.g. Daniel, 2003; Gass, Garvey & Sugerman, 2003) have documented what participants remember learning over time, there has been little research comparing what participants intended to transfer and actually did transfer back home (Daniel, Bobilya, Kalisch & Lindley, 2010). It is often difficult to understand what participants truly transfer to their home. The purpose of this study was to better understand the lessons students intended to transfer to their everyday lives and what actual lessons they recalled two years later.

Methods

The North Carolina Outward Bound School (NCOBS) has been operating multi-day wilderness programs since 1967. NCOBS annually operates courses with various age groups, course lengths, modes of travel, and at various program locations. The components of a typical course include a service project, solo, and personal challenge event – all with the purpose of increasing personal and group growth in various domains. NCOBS participants were chosen as the population under study because of the quality, volume and variety of wilderness programs.

The participants for this study were selected based on criterion sampling (Patton, 2002). The participants had to complete an open-enrollment youth or adult NCOBS course during the 2009 summer and provide consent. They also had to provide consent to be contacted after their NCOBS experience in order to be included in the two-year post experience survey. Of the 570 eligible students, 369 consented to participate in phase one of the study (end-of-course survey) and 111 consented to participate in phase two (follow-up survey two years post). The participants represented 34 U.S. states and three countries. There were 148 male and 221 female participants with 350 ages 13-18. The project utilized a mixed-method design (Creswell & Plano Clark, 2007) with the qualitative questions comprising the dominant method. The study followed a modified grounded-theory approach (Glasser & Strauss, 1967). The process of collecting, coding, and reporting the data allowed for emergent themes to be categorized (Strauss & Corbin, 1998).

The primary survey questions in phase one were, a) "What have you learned by participating in an Outward Bound course?" and b) "When you return home, how do you think you will be affected by your Outward Bound experience?" Phase one of the data collection (end-

of-course survey) was completed by the students at the end of their NCOBS experience and before returning home and was completed by September of 2009. The demographic data was then tabulated along with complete transcriptions generated of the students' responses. Phase two of the data collection focused on the 111 participants that provided consent to be contacted after the course was completed. Of these 111 students, 28 (25%) completed a follow-up survey administered online from June – August 2011. This survey identified what lessons students recalled actually transferring home, allowing the researchers to compare those responses with their intention to transfer. The questions asked during phase two of the project included, a) "What, if anything, did you learn by participating in an NCOBS course two summers ago?", b) "Did your NCOBS course make a difference in your life in any way? Please explain why you think it did or did not and provide one specific example of a change that you made as a result of your participation." The data analysis followed the constant comparative method (Glasser & Strauss, 1967) and naturalistic inquiry (Lincoln & Guba, 1985). Emerging themes were compared with new data throughout all stages of analysis until theoretical saturation was reached (Strauss & Corbin, 1998). Two researchers initially coded the data and twenty-percent of the data was coded by an additional researcher to establish inter-coder reliability. Themes were refined and representative quotations selected to serve as examples in support of each theme.

Results and Discussion

When asked what they learned by participating on an NCOBS course, the participant comments ($n = 369$) at the end of the course revealed the following themes: a) technical skills, b) group dynamics (group reliance, teamwork and community) and c) personal growth (pushing the limits, people skills, and perspective). In addition, when asked how they thought they would be affected by their experience once they returned home, many students' comments indicated a complete "new way of thinking and acting."   These life changes were described in terms of being more a) self-confident and self-reliant, b) aware and appreciative, c) socially respectful and responsible, and d) physically active and capable. When asked two years later whether their NCOBS experience made a difference in their lives, 92% ($n = 26$) of the students stated yes and were able to provide a specific example of a positive life change. Many students said their NCOBS course served as a "reference point" in their lives and the two years post-course changed their perspective. Specifically, students mentioned a "new way of thinking and acting" two years later with the primary themes being: a) new perspective on life, b) increased self-confidence, c) improved personal relationships and d) a more physically active lifestyle.

This project makes a contribution to our understanding of the benefits and outcomes of participation in a wilderness experience program and more specifically what outcomes participants intend to and actually transfer to their everyday lives. Furthermore, it is interesting to note that while different in program focus, these results support recent findings from a transfer of learning study conducted at the National Outdoor Leadership School (NOLS). In particular, the following lessons learned emerged post-course in both studies: a) changes in life perspective, b) self-confidence and c) ability to work as a team member (Sibthorp, et al., 2011). Finally, this study adds to the body of research that has investigated wilderness experience programs and the degree to which the participants transfer learning from the wilderness to their home environment (e.g.: school, work, family, etc.). Due to the small sample in the follow-up study, caution should be used when applying these results beyond this program and population.

References

Creswell, J. W., & Plano-Clark, V. L. (2007). *Designing and conducting mixed methods research.* Thousand, Oaks, CA: Sage.

Daniel, R. B. (2003). *The life significance of a spiritually oriented outward bound-type wilderness expedition.* Unpublished doctoral dissertation. Antioch New England Graduate School.

Daniel, B., Bobilya, A. J., Kalisch, K. & Lindley, B. (2010). Lessons from the outward bound solo: Intended transfer of learning. *Journal of Outdoor Recreation, Education and Learning. 2* (1), 37-58.

Ewert, A., & McAvoy, L. (2000). The effects of wilderness settings on organized groups: A state of knowledge paper. In McCool, S. F., Cole, D. N., Borrie, W T., & O'Loughlin, J. (Eds.), *Wilderness science in a time of change conference: Vol. 3. Wilderness as a place for scientific inquiry,* (pp. 13-25). Ogden, UT: U.S. Department of Agriculture.

Gass, M. A. (1999). Transfer of Learning in Adventure Programming. In J. C. Miles & S. Priest (Eds.), *Adventure Programming.* (2nd ed.). State College, PA: Venture.

Gass, M. A., Garvey, D. E. & Sugerman, D. A. (2003). The long-term effects of a first-year student wilderness orientation program. *The Journal of Experiential Education, 26*(1), 34-40.

Glasser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory strategy for qualitative research.* Hawthorne, NY: Aldine.

Holman, T. & McAvoy, L. H. (2005). Transferring benefits of participation in an integrated wilderness adventure program to daily life. *Journal of Experiential Education 27*(3), 322-325.

Lincoln, Y. S., & Guba E. G. (1985). *Naturalistic inquiry.* Beverly Hills, CA: Sage.

Patton, M. Q. (2002). *Qualitative research and evaluation methods.* Thousand Oaks, CA: Sage.

Sibthorp, J., Furman, N., Paisley, K., Gookin, J. & Shumann, S. (2011). Mechanisms of learning transfer in adventure education: Qualitative results from the NOLS transfer survey. *Journal of Experiential Education, 34*(2), 109-126.

Sibthorp, J., Paisley, K., Furman, N., & Gookin, J. (2008). Long-term impacts attributed to participation in adventure education: Preliminary findings from NOLS. *Research in Outdoor Education, 9,* 86-102.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques and procedures for developing grounded theory* (2nd ed.). London: Sage.

Whittington, A. (2011). Life after the river: Long-term impacts of girls' participation in an adventure program. *Journal of Outdoor Recreation, Education and Learning 3*(1), 40-52.

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Energy Demands of Wilderness Education Students

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Proper energy balance and nutrition are paramount to the success and enjoyment of all participants on backcountry expeditions (Howley Ryan, 2008). Planning a diet that meets both the nutrient and caloric demands while also overcoming the packing, preservation, and cooking obstacles unique to the backcountry can be challenging. Current recommendations for such diets include estimates for the proper amounts of carbohydrates, protein, fats, and micronutrients (FAO/WHO/UNU 1985, Howley Ryan 2008). However, there are few direct measurements of the energetic needs of backcountry enthusiasts and athletes while in the wilderness (Rejc et al. 2010).

This study directly measured total energy expenditure, morphological changes, physiological fitness changes, and caloric intake during five courses at the National Outdoor Leadership School (NOLS). Energy expenditure was measured independently as energy spent on activities, basal metabolic rate, and energy spent on thermoregulation. Activities specifically measured included backpacking at mid-altitude, rock climbing, backcountry rock climbing at mid-altitude, and ski-based winter backpacking. Environments included temperate control environments and extreme heat or cold. The data was used to determine if backcountry energetic needs were being met. The findings from this study can be used to better educate people and students about the importance of proper backcountry nutrition and will support better diet planning for backcountry expeditions.

Methods

A pilot study was conducted during 2010 on the backcountry climbing camp of a NOLS Rocky Mountain Instructor Course (7 females and 8 males) at mid-altitude in Wyoming's Wind River Range (Ocobock, Gookin & Baynes, 2010). The aim of the pilot study was to determine how to make the lab equipment functional and reliable in backcountry settings, to assess the educational pros and cons of the intrusion into the course, and to get a snapshot of what three different energy assessment systems measured in terms of values, relative errors, and significant differences when using cross-methods.

The main study occurred during the 2011 summer and fall semester programs, where each season two groups of 11-16 students were invited to participate in energy measurements as above, but in both a temperate environment and in an extreme climate. The summer semesters hiked at mid-altitude for their temperate control, and later they climbed in extreme heat. The fall semesters (ongoing) hiked in a temperate environment then backpacked on skis in an extreme cold environment, at roughly the same mid-altitude.

Subjects ranged from 18-44 years of age and were in good health. Weight, percent body fat, and muscle mass were collected from each subject before and after the NOLS course using a Tanita BC-558 Ironman Segmental Body Composition Monitor bioelectrical impedance scale. Six or more of the subjects (at least 3 females and 3 males) took part in the energy balance assessment portions of this study. Daily energy expenditure (DEE), or daily metabolic rate, was determined using both flex-heart rate (Leonard 2003) and doubly labeled water methods (DLW) (Snodgrass et al., 2006). Resting metabolic rate (RMR) and calibrations for the flex-heart rate method were carried out using the Cosmed K4b portable calorimetry device following Gayda et al. (2010) both before and after the course. DEE was measured for six days during the middle of

the course. A daily activity log was kept by the course leader. Subjects wore ActiTrainer heart rate monitors with data logging capabilities (heart rate collected every 60 seconds and 3 axis motion data) for six days to collect data from which metabolic rates could be determined. These subjects also kept food diaries to measure caloric intake during this period. The DLW method was used with one to three subjects in each group to validate the results of the heart rate monitors. DLW doses were ingested, and subjects provided urine samples every other day. These samples were analyzed using an isotope ratio mass spectrometer, which measured the ratio of DLW to regular water. The decline in the concentration of DLW is a measure of the metabolic rate and provides highly accurate data. Weights, fat percentages, muscle masses, and resting metabolic rates (RMR) from before and after the course were compared using Student t-tests. Caloric intake and output were also compared using Student t-tests. Subjects were analyzed together and then females and males were analyzed separately.

Experimental limitations of the pilot study included a small sample size, the convenient use of tightly selected instructor course students who tend to be more fit than average NOLS students, and the use of a rock climbing camp in which camp did not move. Limitations of the main study included shortened measurement times, resting metabolic rate and calibration tests being measured in the field with few environmental controls, and the use of stationary rock climbing camps.

Results

In the pilot study all subjects experienced a loss in body mass; post-course body masses were significantly lower than pre-course body masses (Student's t-test, $p<0.001$). Subjects lost an average of 5.4% of their total body mass, with males losing a greater percentage than females, 6.3% and 4.5% respectively. Subjects on a whole lost a significant amount of body fat (Student's t-test, $p=0.04$), with a 5.4% average loss. Separately, females lost a significant portion of their body fat, but males did not (Student's t-test, $p=0.03$ and $p=0.8$ respectively). Overall, there was no significant difference between muscle mass before and after the course. Analyzed separately, however, only males exhibited a significant change in muscle mass (Student's t-test, $p=0.01$). They lost an average of 5.9% of their muscle mass during the course. The six subjects taking part in the energy assessment portion of this study experienced a significant change in resting metabolic rate with post-course RMR being significantly higher than pre-course RMR (Student's t-test, $p=0.01$). This is a general sign of increased cardiovascular capacity.

The pilot study revealed that students were expending significantly more energy than they were consuming (Student's t-test, $p<0.001$). Total energy expenditure ranged from 2441-7739 kcal/day with an average of 4341 kcal/day during the six day study period. Total caloric intake ranged from 1755-5138 kcal/day with an average of 3297 kcal/day. During this study period, subjects experienced an average caloric deficit of 1044 kcal/day.

The main study showed that semester students had an energy deficit during hiking sections and an energy surplus during their stationary climbing camps. Data gathered this summer and fall will be presented that shows changes in body composition over the entire 75 day semesters and the energy balance of different activities and environments.

Discussion

Pilot data and preliminary data from the main study show that all students increase cardiovascular fitness while attending NOLS. However, the energy deficit on hiking activities and energy surplus on stationary activities show that rations could be balanced better. This data

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also shows that existing models for humans in these types of activities (Leonard, et al, 1997) are off by as much as 30%, especially for specific individuals who are extremely active and can expend 7-8,000Kcal/day.

Dietary logs showed that students typically had food available but did not eat the rations, probably because they were busy with activities. This shows that nutrition on expeditions has barriers beyond simple logistics. Proper nutrition includes ration logistics, nutrition education, cooking education, adequate supervision, and an atmosphere that promotes healthy lifestyles. These dietary deficiencies also suggest that some students may need more protein in their diets during the most rigorous activities.

This project also showed how wilderness education programs can use some simple tools to monitor energy balance, providing a feedback mechanism for running programs that are both challenging and healthy.

References

FAO/WHO/UNU (Food and Agriculture Organization/World Health Organization/United Nations University) (1985) *Energy and Protein Requirements*. WHO Technical Support Series, No. 724. Geneva: World Health Organization.

Gayda M., Bosquet L., Juneau M., Guiraud T., Lambert J., & Nigam A. (2010). Comparison of gas exchange data using the Aquatrainer system and the facemask with Cosmed K4b2 exercise in healthy subject. *European Journal of Applied Physiology* (In Press).

Howley Ryan, M. (2008). *Backcountry Nutrition*. Mechanicsburg, PA: Stackpole Books.

Leonard W.R. (2003). Measuring human energy expenditure: What have we learned from the flex-heart rate method? *American Journal of Human Biology,* 15, 479-489.

Leonard WR, Galloway VA, Ivakine E (1997). Underestimation of daily energy expenditure with the factorial method: implications for anthropological research. *Am. J. Phys. Anthrop.* 103: 443-454.

Ocobock, C.,; Gookin, J.; Baynes, S. (2011) "Energy Balance Assessment of Students on a National Outdoor Leadership School Course" *The Journal of Outdoor Recreation, Education, and Leadership, 3(2).*

Rejc E., Lazzer S., & Antonutto, G. (2010) Energy expenditure and dietary intake of athletes during an ultraendurance event developed by hiking, cycling and mountain climbing. *Journal of Sports Medicine and Physical Fitness. 50*(3), 296-302.

Snodgrass, J. J., Leonard, W. R., Tarskaia L. A., & Schoeller, D. A. (2006). Total energy expenditure in the Yakut (Sakha) of Siberia as measured by the doubly labeled water method. *American Journal of Clinical Nutrition. 84*,798-806.

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The Development and Validation of a New Assessment Scale:
Measuring the Effectiveness of the Leave No Trace PEAK Program

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Background

The *Leave No Trace Center for Outdoor Ethics* is a non-profit educational organization that teaches skills and values for recreating responsibly in the out-of-doors. In partnership with Recreational Equipment Inc., *Leave No Trace* developed the *Promoting Environmental Awareness in Kids (PEAK)* program to help children learn environmentally responsible behaviors. *Leave No Trace* developed *PEAK* based on the seven *Leave No Trace* principles and created a 'Pack' that contains several interactive activities specifically designed to teach children about the environment and how to use the seven *Leave No Trace* principles to recreate responsibly in the out-of-doors.

Intentional instruction of environmental education is important to increasing environmental stewardship in children (Blanchard & Buchanan, 2011). With the *No Child Left Inside* movement aimed at reconnecting children with nature, environmental education programs such as *PEAK,* are key to teaching children skills necessary to make responsible decisions when recreating in the out-of-doors (Louv, 2008). Given the rising importance of systematically collecting data, researchers stress the importance of creating evaluations and surveys that will help programs determine the effectiveness of their curriculum and determine if their intended goals have been met. Therefore, it is important to develop appropriate tools to gather information (Baldwin, Caldwell, & Witt, 2005). While the *PEAK* program has been in existence for a number of years, formal assessment of the program's effectiveness has not been empirically tested. Hence, the purpose of this study was to develop and test an assessment tool for measuring the effectiveness of the *PEAK* program.

Methods

Since the main goals of *Leave No Trace* are to increase awareness of the seven principles and to promote stewardship of public lands, a scale was designed to assess children's attitudes and opinions regarding their behavior in the natural environment. During the initial design, a 40-item Likert-type scale was constructed based on the stated goals of the *PEAK* program and specific material in the *PEAK Pack* activities.

The PEAK Assessment Scale (PAS) included five items per principle and an additional five items designed to measure general feelings about *Leave No Trace* and the natural environment. Response options ranged from *4 = strongly agree* to *1 = strongly disagree.* To determine if respondents read each item carefully, eight reverse coded items were embedded in the scale. The scale was reviewed and revised based on feedback from a panel of education experts, including an education administrator from the *Leave No Trace Center for Outdoor Ethics*. The initial PAS was tested on fifth and sixth grade elementary school children in the spring of 2010 on two occasions during an afterschool program.

Results of the pilot test indicated the need to include a *Don't Know* option because some children lacked any knowledge about the key principles prior to participating in the *PEAK* program. The PAS was revised and re-tested in the spring of 2011.
During the second administration, fifth and sixth graders from a local elementary school were

invited to participate in a day-long *PEAK* program at a local nature center. The activities were facilitated by college students in an environmental and outdoor education course who were trained on how to facilitate the *PEAK* program activities. Prior to attending the one-day field trip to the nature center, the fifth and sixth graders completed the PAS pre-test. The children completed the post-test following their participation in the *PEAK* program.

A modified 5-item version of the Affinity for Nature (AN) Scale (Ellis & Sibthorp, 2006) was also administered during the post-test to assess convergent validity. The AN Scale was designed to measure retrospective change after participation in an environmental program. The AN Scale items were modified to be reflective of the one-day experience that took place at the nature center. For instance, the first item states "I like being in nature" and the second portion of the first item reads "Is the above statement more or less true today than before you did the PEAK program?" which is the retrospective item.

Results

After the pre-test and post-test assessments were matched and the data were cleaned and screened for outliers, a total of 71 usable surveys were used in further analysis. Study participants ranged in age from 10 to 13 with a mean age of 11.27 years (SD = .70), and included 41 females (57%) and 30 males (42%).

A factor analysis was conducted to determine if the hypothesized eight factors (one for each of the seven principles and one for overall feelings about *Leave No Trace*) held. Results of the factor analysis indicated the scale was unidimensional. Further analysis to confirm if each of the items on the eight subscales held on the appropriate factor indicated a two-factor solution. Upon examination of the individual items, it was determined that in each instance the one item that split into a second factor was a reverse-coded item. This may have been due to the children's difficulty in understanding the negatively worded items. Each construct with a KMO greater than 0.60 and a significant Bartlett's Test of Sphericity (p<0.05) was accepted as meeting the minimum requirements for sampling adequacy in order to perform validity and reliability analyses (Tabacknick & Fidell, 1996). A Chronbach alpha was calculated for each subscale as a measure of reliability. After deletion of the eight reverse-coded items, the Cronbach's Alpha Reliability for each subscale fell in between .612 and .775 (acceptable to good) and the Chronbach alpha for the whole scale was .947.

To determine if there was a significant effect from the pre- and post-test, a MANOVA was conducted. A significant increase was found between the pre-test and the post-test with the post-test scores being significantly higher, $F(1, 140) = 11.15$, p<.01, with the pre-test (M = 3.41, SD = .34) compared to the post-test (M = 3.61, SD = .36). A Pearson Correlation was used to test for convergent validity between the PAS and AN. The results from this test indicated no significant correlation between the two scales ($r = .199$).

Discussion

Results of this study indicate that the 32-item PEAK Assessment Scale has sound reliability and is an effective measure of the *PEAK* program. The data also indicate the PAS is a unidimensional measure and best used as an overall indicator. This may be due to the fact that many of the *Leave No Trace* principles operate off of the ultimate principle of minimizing one's impact on the environment and, as such, are difficult to be individually parsed out. In addition, the *PEAK* program was shown to be effective at increasing children's knowledge of the *Leave*

Know Trace principles and their understanding of the appropriate decisions and actions to take to follow those principles.

The lack of a significant correlation between the PAS and AN may be due to the fact that participants in the *PEAK* program may not necessarily increase their affinity for nature, but simply gain a better understanding of how to minimize their impact. Additional reasons for this will be further explored.

References

Blanchard, P. B. & Buchanan, T. K. (2011). Environmental stewardship in early childhood. *Childhood Education.*

Ellis, G. & Sibthorp, J. (2006). *Development and validation of a batter of age appropriate measures for camper outcomes.* Technical report for the American Camp Association.

Leave No Trace Center for Outdoor Ethics. Promoting environmental awareness in kids (PEAK). (2010, January 5). Retrieved from http://lnt.org/programs/peak.php

Louv, R. (2008). Last child in the woods: Saving our children from nature-deficit disorder (2nd ed.). New York: Woodman Publishing Company, Inc.

Tabacknick, B. G. & Fidell, L.S. (1996). Using multivariate statistics (3rd ed.). New York: Harper Collins.

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The Benefits and Effects of Women- Specific Outdoor Programming
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Outdoor and wilderness recreation have long been considered the man's domain, the outdoors a man's realm (Elsrud, 2005). Society emphasizes the masculinity of outdoor activities and inadvertently discourages women from participation (Culp, 1998; Little, 2002). These gender discrepancies are partially related to differences in how men and women conduct themselves in the outdoors. Nolan and Priest (1993) explain that many men see the outdoors as something to triumph over, whereas many women seek communal experiences with nature. While women have different outlooks on outdoor experiences than men, it is nonetheless important and beneficial for women to have outdoor and wilderness experiences.

Background
There are considerable benefits that women experience after having spent time in the outdoors, and it is important that women are given the opportunity to discover them (McDermott, 2004). Most notably, women have found themselves empowered after wilderness experiences; they feel more self- confident and self-assured when returning home (Culp, 1998; Elsrud, 2005; McDermott, 2004). Other research has found that the knowledge, skills, and confidence that women gain in the outdoors do transfer to their daily lives, and do improve life once they return home (Pohl, Borrie, & Patterson, 2000).

Investigations into how women experience the outdoors have shown that there are socio-cultural, personal, and technical constraints that can prevent a woman from having outdoor or wilderness experiences (Little, 2002). Many women feel trapped by these constraints, and women find the constraints difficult to overcome, in order to make outdoor recreation a part of their lives (Henderson, 1994). Additionally, many women feel that due to their lack of skill and ability, venturing into the outdoors with men would be a negative and competitive experience, further confirming any doubts about the activity they may have had prior to participation (McDermott, 2004). These differences and constraints have led many women to seek gender specific outdoor programming (McDermott, 2004).

Researchers have determined that women desire the availability of women-only and women-specific outdoor programming to assist in overcoming the barriers that prevent them from participating in outdoor and wilderness recreation, (Culp, 1998, McDermott, 2004; Pohl et al., 2000). McDermott (2004) found that women who participated in women-only canoeing program experienced a unique sense of freedom that was only possible while being surrounded by an all-female group. These same women expressed being empowered, both physically and mentally, through this women-only experience and valued being with other women who enjoyed similar activities. Likewise, Pohl et al., (2000), who considered the connection of outdoor recreation to a women's everyday life, discovered that the communications and connections formed in an all-women group was important and valuable for the participants.

The purposes of this study were threefold. The first was to explore if women-specific outdoor programming helps to alleviate some of the outdoor recreation constraints that women face. Second, it sought to understand how skill building and all-women participation programming could further encourage women to participate in outdoor and wilderness recreation. Finally, it surveyed the benefits that individuals received from participating in women- specific outdoor programming.

Methods

Qualitative methods were employed to help understand the influence women-specific programming had on participants. A total of 40 women enrolled in a three day Women in the Outdoors (WITO) event, sponsored by the National Wild Turkey Federation. They completed pre-participation questionnaires that evaluated their previous participation in outdoor recreation and the constraints they may have faced prior to the women-specific event. Each then completed post-participation questionnaires evaluating their current perceptions of outdoor recreation, and predicting their future participation following their experience. Both questionnaires consisted of open-ended questions concerning participation in outdoor recreation, and self-confidence and comfort levels in general and in the outdoors; some demographic information was also collected with the questionnaires. Qualitative information from questionnaires was coded utilizing constant comparison (Creswell, 1998; Glaser & Strauss, 1967).

Results

Several important themes emerged from analysis of the questionnaires. A primary theme was l how this women specific programming improved overall confidence level in the outdoors, as was shown by the quote from one of the participants: "This experience helped me to feel more confident in myself." Another important theme identified was how the education that took place also helped to alleviate participation barriers women faced prior to participation, as well as increased confidence levels. This was demonstrated through quotes such as, "I have more knowledge about being in the outdoors and how to equip myself to be outdoors," and "Education beings confidence." Prior to participation women cited things such as, time, weather, physical condition, fear, and lack of equipment as preventing them from participation. It was found that these barriers were eliminated due to feeling more active, more prepared, and being more knowledgeable and educated about the outdoors.

A third theme that emerged from the data that reflected the benefits of participation in the WITO event was that the women felt more comfortable in the outdoors by gaining a sense of independence and empowerment from their participation. They stated that being in an all-women setting helped them to feel comfortable, and this was a "very supportive," and "comfortable environment." It was also stated that this education brought confidence, and that doing challenging activities increased self-confidence. One woman stated that participation in this event helped her to feel better about herself, while another expressed that this experience helped her to feel more confident in herself. Lastly, 18 of the 40 participants stated that they planned to spend more time outdoors than they did prior to their women's only experience.

Discussion/Implications

This study reflects the findings of previous research (Culp, 1998; Henderson, Winn, et al., 1996; McDermott, 2004; Nolan & Priest, 1993) that the benefits gained are greatly enhanced when women are introduced to outdoor pursuits in a women specific environment. These results show the importance of outdoor recreation for women, as well as the benefits of participating in a women-specific setting (Pohl, Borrie, &and Patterson, 2000). Women thrive in programming that is designed specifically for them, and that employs female instructors (McDermott, 2004).

In agreement with Pohl, Borrie, and Patterson (2000), this research shows that the benefits gained from women-specific programming provide more than just knowledge about the outdoors and a new sense of comfort. These experiences help women to build self-confidence

and independence in their daily lives. Future research in this area may want to look at this from a longitudinal stance, and re-interview participants to discover whether or not they are spending more time engaging in outdoor recreational activities. It would also be very interesting to see if there are correlations between a women's family stage, education level, and income, and how that effects her desire and ability to participate. For these reasons programmers and practitioners should be considering the addition of women-specific programming to their current curriculum in order to encourage women to participate and enhance their lives.

References

Creswell, J. W. (1998) *Qualitative Inquiry and Research Design.* Sage Publications: Thousand Oaks.

Culp, R. H. (1998). Adolescent girls and outdoor recreation: A case study examining constraints and effective programming. *Journal of Leisure Research, 30*(3), 356-379.

Elsrud, T. (2005). Recapturing the adventuress: Narratives on identity and gendered positioning in backpacking. *Tourism Review International, 9*, 123-137.

Glaser, B., G. & Strauss, A., L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Aldine Publishing Company: Chicago, Illinois.

Henderson, K.A. (1994). Perspectives on analyzing gender, women, and leisure. *Journal of Leisure Research, 26* (2), 119-137.

Henderson, K.A., Winn, S., & Roberts N.S. (1996, January). "Kind of in the middle": The gendered meanings of the outdoors for women students. Coalition for Education in the Outdoors Third Research Symposium. Symposium conducted at the meeting of Coalition for Education in the Outdoors, Bradford Woods, Indiana.

Little, D.E. (2002). Women and adventure recreation: Reconstructing leisure constraints and adventure experiences to negotiate continuing participation. *Journal of Leisure Research, 34*(2), 157-177).

McDermott, L. (2004) Exploring intersections of physicality and female-only canoeing experiences. *Leisure Studies, 23*(3), 283-301. doi: 10.1080/0261436042000253039

Nolan, T.L., & Priest S. (1993). Outdoor programming for women only? *The Journal of Adventure Education and Outdoor Leadership, 10*(1), 14-17.

Pohl, S.L., Borrie, W.T., & Patterson, M.E. (2000). Women, wilderness, and everyday life: A documentation of the connection between wilderness recreation and women's everyday lives. *Journal of Leisure Research*, *32*(4), 415-434.

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The Importance of Program Quality in Youth Development: Program Quality Indicators as Predictors of Outcome Achievement Among NOLS Participants.

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Youth programs are increasingly being expected to focus on elements of their programs that they can directly control. In contrast to program outcomes, which can vary immensely by each participant, the qualities of program design and implementation at the point of service directly influence the experiences of participants. The qualities of experiences afforded to participants include the active role of the participant, the leader, the social and physical environments, and a myriad of contextual variables.   These variables may interact in a way that is beneficial and developmental for an individual, or they may interact in a way that is ineffective or even detrimental. Literature and research offers some guidance regarding qualities of experience that typically are beneficial for youth participants. For example, The National Research Council recognizes essential program elements such as developmental frameworks, commitment to assessment of outcomes, trained staff, safety, structure, supportive relationships, opportunities for belonging, positive social norms, opportunities to make a difference and build skills, and integration with family, school, and community efforts (Eccles & Gootman, 2002). As this line of inquiry has evolved, different terms have been used, but developmental experiences for youth should be engaging, respectful, empowering, interactive, supportive, and safe (Smith & Akiva, 2008; Yohalem & Wilson-Ahlstrom, 2007). Specific to adventure and outdoor education, other elements are typically viewed as desirable program elements including reflection (e.g., Gass & Priest, 2006; Green et al., 2000); feedback from instructors (e.g., Caulkins, 2006; Green et al., 2000; Schumann et al., 2009); relationships with leaders (e.g., Caulkins, 2006; Sibthorp et al., 2007), empowerment (e.g., McKenzie, 2000; Sibthorp et al., 2007), social support (e.g., Neill & Dias, 2002), and positive group dynamics (e.g., Ewert & McAvoy, 1999; McKenzie, 2003).

While many of these elements of program quality are determined at the program level and cannot be reasonably assessed by participants, the influence of other elements is largely a matter of participant perception. A program may, for example, believe that it creates respectful and emotional safe environment, but if a participant does not perceive respect or feel emotionally safe then it is difficult to realize benefits from the etic perspective of experience provision. Therefore the purpose of this study was to determine the importance of participant perceptions of program quality indicators on participant development. Specifically, we selected nine indicators of program quality to examine in relation to self-reported growth in Leadership and Outdoor Skills, two outcomes central to the National Outdoor Leadership School (NOLS).

Methods

These data were collected via the NOLS Course Quality Survey (CQS) between August 2009 and July of 2010. This sample includes youth (delimited to ages 13-25 based on the youth program quality literature) from a variety of different course seasons and locations as well as course types. The CQS is given to all students at the conclusion of their course and measures a variety of different constructs. The CQS has been used in a number of past studies (Paisley et al., 2008; Sibthorp et al., 2007; 2008; Shooter et al, 2010) and has shown good evidence of utility, validity and internal consistency for the primary outcomes of interest in this study.

For this study we were primarily concerned with the items on the CQS that are theoretically constructed to tap course quality and items that were representative of outcomes

primary to the NOLS experience. The nine course quality predictors that were included in this study were safety, individual respect, engagement, reflection, feedback from instructors, feedback from students, presence of role models, personal empowerment, and group functioning. All of these indicators were measured using a seven point likert-type scale anchored by "Strongly Disagree" and "Strongly Agree". The outcome variables for this study were leadership skills (7-item $\alpha = .93$) and outdoor skills (4-item $\alpha = .89$). Both of these subscales are based on the same scale as the predictor variables and had separate but identical retrospective pretest and posttest scales.

In order to address differences by course type, multi-level modeling was used to analyze the data; participants were modeled at level 1 and courses at level 2. A model comparison approach was used, where an empty or null model was compared to a covariate model and finally to the model including the hypothesized predictors. Significant improvements in deviation scores ($p < .05$) indicated improved model fit. Coefficients significant at $p < .05$ were interpreted.

Results

The final sample included 1339 students enrolled in 169 different NOLS courses. Participants were 65% male and had an average age of 18.6 years. Course differences explained a significant ($p < .05$) amount of variance in both leadership and outdoor skills, and the addition of only the pretest as a covariate significantly improved both models ($p < .01$). When the nine hypothesized quality indicators were entered as level 1 predictors, difference in the 2 models emerged. For outdoor skills, safety, feedback from the instructors, feedback from the students, presences of role models, and personal empowerment were the only significant predictors. For leadership skills, safety, presence of role models, and personal empowerment remained significant predictors; reflection and group functioning were also significant predictors. In addition to these primary analyses, consistent with previous work, age was negatively related to outcomes (younger students report lower levels of leadership and outdoor skills), and longer courses explained a significant amount of the course level (level 2) variance compared to shorter courses. The inclusion of the hypothesized predictors significantly improved model fit ($p < .01$) for both models. Collectively, the set of included predictors explained 38% of the variance in outdoor skills and 54% of the variance in leadership skills.

Discussion

The purpose of this study was to determine the relationship between participant perceptions of program quality indicators and participant development of identified outcomes. Results of this study indicate that the qualities that are most predictive of overall participant development on NOLS courses are empowerment, safety, and presence of role models. This assertion is supported by literature that says development driving experiences for students should be engaging, safe, and supportive (Smith & Akiva, 2008). For the development of outdoor skills specifically, instructor and student feedback, were important course qualities. As outdoor skills are a tangible and applied skill, more knowledgeable others take on the roles of experts, which may make their feedback especially important in the development of technical skills. Leadership skills, in contrast, may be developed thorough less tactile and more conversational means. Providing students with reflection time as well as cultivating a positive group environment may be more important in the development of leadership and other interpersonal skills.

Despite the theoretical importance and empirical support for the aforementioned facets of

course program quality, it is likely that other programmatic aspects remain important. Qualities such as respect have inherent overlap with concepts such as safety and it is likely that an engaging learning model remains generally important. If other outcomes were targeted and measured, it is possible that different facets of quality would have emerged as more predictive. In addition, perceived skill level differs from actual skill level and the limitations of a correlational design with a convenience sample limit the conclusions from this study. Despite these limitations, we believe it is important to move the conversation away from outcomes and toward point-of-service qualities that can be directly controlled and influenced by programmers and designers. The broader field of youth development is heading this direction and outdoor and adventure professionals involved with youth could benefit from this approach to youth development.

References

Caulkins, M. C., White, D. D., & Russell, K. C. (2006). The role of physical exercise in wilderness therapy for troubled adolescent women. *Journal of Experiential Education*, 29(1), 18-37.

Eccles, J. & Gootman, J. (2002). *Community programs to promote youth development*. Washington, DC: National Academies Press

Ewert, A. & McAvoy, L. (1999). The effects of wilderness setting on organized groups: A state of knowledge paper. In S.F. McCool, D. N. Cole, W. T. Borrie, & J. O'Loughlin (Eds.), Wilderness as a place for scientific inquiry (USDA Forest Service Proceedings RMRS-P-0-VOL-3, pp. 1-14). Washington DC: U.S. Department of Agriculture.

Field, A. (2009). *Discovering Statistics Using SPSS*. Sage Publications Ltd, third edition.

Gass, M., & Priest, S. (2006). The effectiveness of metaphoric facilitation styles in corporate adventure training CAT) programs. *Journal of Experiential Education, 29(*1), 78-94.

Green, G., Kleiber, D., & Tarrant, M. (2000). The effect of an adventure-based recreation program on the development of resiliency in low income minority youth. *Journal of Park and Recreation Administration, 18*(3). 76-97.

McKenzie, M. D. (2000). How are adventure education program outcomes achieved: A review of the literature. *Australian Journal of Outdoor Education, 5(1)*, 19-28.

McKenzie, M. (2003). Beyond "The Outward Bound Process": Rethinking student learning. *Journal of Experiential Education, 26*(1), 8-23.

Neill, J., & Dias, K. L., (2001). Adventure education and resilience: The double-edged sword. *Journal of Adventure Education and Outdoor Learning, 1*(2) 35-42.

Paisley, K., Sibthorp, J., Gookin, J., Furman, N., Schumann, S., & McAvoy, L. (2008). Predictors of participant development though adventure education: Replication and extension of previous findings from NOLS. *Research in Outdoor Education, 9,* 60-74.

Schumann, S., Paisley, K., Sibthorp, J., and Gookin, J. (2009) Instructor Influences on Student Learning at NOLS. *Journal of Outdoor Recreation and Education Leade*rship. *1*(1), 15-37.

Shooter, W., Sibthorp, J., & Gookin, J. (2010). The importance of trust in outdoor education: Exploring the relation between trust in outdoor leaders and developmental outcomes. Research in Outdoor Education.

Sibthorp, J., Paisley, K. P., & Gookin, J. (2007). Exploring participant development through adventure-based programming: A model from the National Outdoor Leadership School. *Leisure Sciences, 29*(1), 1-18.

Sibthorp, J., Paisley, K., Gookin, J., & Furman, N. (2008). The pedagogic value of student autonomy in adventure education. *Journal of Experiential Education 31(2),* 136-151.

Smith, C., & Akiva, T. (2008). Quality accountability: Improving fidelity of broad developmentally focused interventions. In M. Shinn & H. Yoshikawa (Eds.) *Toward positive youth development* (pp. 192-212). New York: Oxford.

Yohalem, N., & Wilson-Ahlstrom, A. with Fischer, S., & Shinn, M. (2007). *Measuring Youth Program Quality: A Guide to Assessment Tools.* Washington, D.C.: The Forum for Youth Investment, Impact Strategies, Inc.

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Choosing the Right Glue:
Investigating the Effect of Adventure-Based Activities
on the Relationship between Fathers and Sons
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Adolescence is a time of a variety of challenges for youth as they seek to establish their personal identity and autonomy. These challenges are often manifested in the adolescents' relationship with siblings and parents (Huff, Widmer, McCoy, & Hill, 2003). Understanding the dynamics of parent-adolescent relationships is critically important with research consistently demonstrating a strong link between the quality of this relationship and the level of adolescent depression, delinquency, substance and alcohol abuse, sexual promiscuity, and school performance (Cohn, Cowan, Cowan, & Pearson, 1992; Miller, Benson, & Galbraith, 2001).

Based on the Social Development Model (SDM) (Catalano and Hawkins 1996), this study examined the effect of participation in an adventure education (AE) program upon levels of trust, communication, and relationship quality between fathers and sons. As suggested by SDM, healthy communication and relationship processes used by families often provide adolescents with a context from which to learn appropriate inter- and intra-personal behaviors, development of more effective problem-solving skills, and increased acceptance of personal responsibility. Thus, relationship-building is critical to families by providing a mechanism for the family to identify and solve dysfunctional behaviors and attitudes (Ingoldsby, Smith et al. 2009).

Social support has been defined as "the degree to which individuals have access to social resources, in the form of relationships, on which they can rely" (Johnson and Sarason 1979). AE research often utilizes social support as an outcome variable attendant to participation in extended outdoor adventure trips (e.g. Neill and Dias 2001). However, these studies tend to refer to support from a group of peers that will only exist for the duration of the course itself. When participants return home, they may continue to feel supported by the other members of their groups, but they will likely have very limited contact with each other (if at all). Conversely, the majority of the father-son dyads who are enrolled in this study will return home together and will thus have a greater ability to apply what they have learned on their course. As such, this study presents data from a type of opportunity that exists in very few adventure education settings.

Program Description

Summit Adventure offers unique experiences for fathers and sons to participate in an AE program. During the course, social support systems are enhanced through meaningful adventure experiences such as rock climbing, rappelling, hiking and sharing a "duo" together (duo is an idea based off "solo", where the father and son spend a significant amount of time isolated together).

Methods

This study utilized a mixed-method design (Hanson, Creswell, Clark, Petska, & Creswell, 2005). Survey data collection used a retrospective pre-test administered to the participants on day five of the course (the final morning in the field) (Pratt, McGuigan, & Katzev, 2000). In conjunction with the survey data, semi-structured qualitative telephone interviews will be conducted to expand upon the quantitative information gathered.

The quantitative element of this study consisted of three different scales combined to make one instrument used to measure aspects of social support. The qualitative portion of the study consisted of three parts: participant observation while participating in the program, instructor surveys designed to capture how effective the program was from the instructor's perspective, and semi-structured follow up interviews conducted two months after their participation in the treatment.

Research Findings

An analysis of the data showed a significant change in all three variables among the fathers and sons analyzed in this study.

Table 1: Paired Sample *t*-test Results

	N	SD	*t*-score	Significance	Effect Size
Trust					
Fathers	15	.66	4.8	<.01	.26
Sons	7	.32	3.51	.01	.37
Communication					
Fathers	17	.3	7.9	<.01	.33
Sons	8	1	1.96	.09	.22
Relationship Quality					
Fathers	18	.44	6.4	<.01	.27
Sons	9	.78	2.2	.06	.22
Social Support					
Fathers	15	.31	7.27	<.01	.34
Sons	5	.24	4.04	.02	.5

p<.05

Discussion

Due to societal constraints, the ability to enhance male relationships through socially accepted mediums present limited opportunities. Through these AE programs fathers and sons are forced to examine their relationship, talk about sensitive subjects, and explore the possibilities and struggles of their relationship. This experience enable fathers to learn how they can support their son, while sons often learn valuable life lessons such as how much a resource their father is for life advice and support.

The experience also provides a unique experience that the father and son can share. Often times, students come on the course remarking that their father spends very little time at home due to other obligations. This AE experience provides a forum for them to communicate and spend an entire five days together with no distractions from each other, forcing them to collaborate and communicate. Although it is unclear that negative behaviors are curbed by this

program, this research, along with the context provided by SDM suggests that positive outcomes are possible. Practitioners should be aware of the methods in which social support is enhanced through the findings of this study.

References

Catalano, R. F., & Hawkins, J. D. (1996). The social development model: A theory of antisocial behavior. . In J. D. Hawkins (Ed.), *Deliquency and crime: Current theories* (pp. 149-197). New York: Cambridge University Press.

Cohn, D. A., Cowan, P. A., Cowan, C. P., & Pearson, J. L. (1992). Mother's and father's working models of childhood attachment relationships: Parenting styles, and child behavior. *Development and Psychopathology, 4*, 417-431.

Duerden, M. D., & Witt, P. A. (2010). The impact of socialization on youth program outcomes: A Social Development Model perspective. *Leisure Sciences, 32*, 299-317.

Hanson, W. E., Creswell, J. W., Clark, V. L., Petska, K., & Creswell, J. D. (2005). Mixed methods research design in counseling psychology. *Journal of Counseling Psychology, 52*(2), 224-235.

Huff, C., Widmer, M., McCoy, K., & Hill, B. (2003). The influence of challenging outdoor recreation on parent-adolescent communication. *Therapeutic Recreation Journal, 37*(1), 18-37.

Ingoldsby, B., Smith, S., & Miller, E. (2009). *Exploring family theories*. Los Angeles: Roxbury.

Johnson, J., & Sarason, I. (1979). Moderator variables in life stress research. In I. G. Sarason & Miller, B. C., Benson, B., & Galbraith, K. A. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review, 21*, 1-38.

Pratt, C., McGuigan, W., & Katzev, A. (2000). Measuring program outcomes: Using retrospective pretest methodology. *American Journal of Evaluation, 21*(3), 341.

Speilberger, C. D. (Eds.), *Stress and Anxiety* (Vol. 6, pp. 151-167). Washington D.C.: Hemisphere.

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The Effects of a Youth Mentoring Program on Adolescents' Self-Regulation Skills at Camp
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Self-regulatory skills are said to be one of the most important functions driving healthy development in youth (e.g., Lerner, Brentano, Dowling & Anderson, 2002). Self-regulated behaviors are characterized by an ability to calibrate emotions, behaviors, cognitions, and motivations to achieve a particular goal. Youth who are better able to self-regulate their own emotions, cognitive processes, motives, behaviors and their environment are better prepared to succeed in school, work, and are more likely to develop into productive members of society. A number of programs aimed at promoting adaptive self-regulatory skills in youth have shown evidence of positive developmental gains in the acquisition of self-regulatory skills (Perels, Merget-Kullman, Wende, & Schmitz, et al., 2008; Wyman et al., 2010). Despite such evidence, the role of self-regulation in camp is one that has received little attention. Summer camp programs, however, are a promising and untapped context to implement a self-regulation program and extend important growth opportunities for young people.

Recreation programs, and camps specifically, can provide a rich context for youth to learn, practice, and develop the self-regulatory skills that will help them navigate and transition into adulthood. In order for recreation activities to facilitate developmental outcomes, activities typically need to be goal oriented, challenging, build skills, require attention, and be effortful (Carnegie Council on Adolescent Development, 1992). Activities that are goal oriented and build skills typically requires youth to employ important cognitive skills, such as, planning, monitoring, and evaluating one's efforts (Larson & Angus, 2011). These types of cognitive processing skills are central components known to support self-regulation (e.g., Zimmerman, 2000). More importantly, an integral aspect of recreation programs is the enjoyable, novel, and challenging nature of the activities. These types of activities elicit self-regulatory skills because they motivate youth to problem solve, overcome obstacles, and think about goals (Larson & Hanson, 2005).

Relationships are another key component to achieving positive outcomes in summer camps (ACA, 2006) and are central to fostering self-regulation (Bell & Calkins, 2000). As Keating (2004) states, "The core of self-regulation and self-knowledge lies in relationships" (p.76). Premised on this belief, a number of successful self-regulation interventions focus on developing self-regulation through adult-youth relationships (e.g., Perels, et al., 2008; Wyman et al., 2010). These interventions teach adolescents skills associated with self-regulation. These skills include: setting goals, selecting effective strategies to problem-solve, adaptively dealing with challenges, monitoring progress, and evaluating strategy use (e.g., Dignath & Buettner, 2008). The development of these skills often occurs when a youth first observes an adult role model the skill (e.g., plan how to achieve a goal), and then practices the skill until he or she is able to do so independently (Diaz, Neal, & Amaya-Williams, 1990). Recognizing the powerful role that adult-youth relationships have within recreation programs (e.g., Rhodes, 2002), it is argued that such relationship might serve as a critical vehicle to foster self-regulation. Therefore, the purpose of this study was to examine the effects of a youth mentoring intervention on adolescent's level of self-regulation within a summer camp.

Methods

During the summer of 2011, youth ages 9-14, enrolled in a summer camp in Salt Lake City, Utah were invited to participate in this study. Two sites from the same program were used for this study, one to serve as a treatment site, the other as a comparison site. The intervention entailed each youth participant having a weekly 'check-in' meeting with a camp counselor for eight weeks to discuss goal setting, identifying and using effective strategies to achieve goals, monitoring efforts, appropriately evaluating strategies, and how to make necessary adjustments to achieve goals. Each camp staff 'mentor' attended a 3-day training prior to camp. Training included sessions on adolescent development, self-regulation, and hands-on practice sessions to learn how to effectively deliver the mentoring check-ins, as outlined in the curriculum.

Each of the camp staff were asked to complete the Behavior Rating Inventory of Executive Function-Teacher Form (BRIEF-T) (Guy, Isquith, & Gioia, 2004) on youth participant during week 1 (baseline), week 5, and week 8 of the summer camp session. The BRIEF-T is an 86-item questionnaire that assesses everyday behaviors associated with specific domains of self-regulated problem-solving and social functioning. Responses range from 1 (Never) to 3 (Often). Items on the scale include items such as, *Has trouble carrying out the actions needed to reach goals, Has good ideas, but does not get the job done (lacks follow-through),* and *Leaves messes that others have to clean up.* It was hypothesized that program participants in the treatment site would show greater changes in self-regulated behaviors than participants in the comparison group on the subscales of the BRIEF that measure planning and organization of materials.

Results

Self-Regulation scores were collected on the 85 participants enrolled in the study. Sixty-four (*N* = 64) complete data sets at all 3 times were available for hypothesis testing. Participants included 15 females and 49 males. The average age of the participants was 11.19 years old. Sixty one percent of the participants were Caucasian, 23.4% were Hispanic, 6.3 % identified as Black, and the remaining 9.4 % were of other ethnicities. Over 81% of the participants qualified for reduced tuition, as determined by the participant's family income. A repeated measures multivariate analysis of variance (RM MANOVA) was conducted to determine differences in BRIEF-T scores based on site. More specifically, we were interested in the rate of change in dependent variables over time and whether any differences were attributable to site. Thus, the slopes for each of the dependent variables were calculated and transformed into a new variable prior to conducting the MANOVA. Results indicate significant differences in BRIEF-T scores between the comparison and treatment sites, Pillai's Trace = .234, $F_{(5, 58)}$ =3.54, $p <. 007$, multivariate η^2 = .234. Following significant multivariate results, follow up univariate ANOVA's, one for each dependent variable, were examined. Results indicated a significant effect for the Planning, $F_{(1, 62)}$ = 5.76, $p < .01$, partial η^2 = .085 as well as, the Organization of Materials variables $F_{(1, 62)} = 6.72$, $p < .01$, partial $\eta^2 = .102$. Despite lack of significance on the other dependent variables, the mean scores on each variable revealed that adolescents at the treatment site showed a greater rate of change in working memory, initiate and monitoring, over the comparison site.

Discussion

The results of this study support the premise that youth mentoring can be a powerful mechanism within summer camps to promote self-regulation skills in youth. Targeting self-regulatory skills not only can maximize the camp experience and outcome achievement, but also serve to encourage healthy developmental trajectories. Results of this study suggest that formal and

targeted youth mentoring provide a vehicle that can support adolescents' ability to self-regulate, specifically when it comes to planning and organizational skills. While structured mentoring occurred weekly, staff also engaged in informal coaching throughout the week to help support self-regulated behaviors in campers. This powerful relational mechanism lends to implications for intentional program design and the role of adult-youth interactions in supporting adolescent development. Future research should then seek to identify the types and duration of social interactions along with other programming components that enhance self-regulatory strategy use.

References

American Camp Association (2006). *Inspirations: Developmental supports and opportunities of youths' experiences at camp.* Retrieved September 9, 2011 from http://www.acacamps.org/research/enhance/inspirations.

Bell, K. & Calkins, S. (2000). Relationships as inputs and outputs of emotion regulation. *Psychological Inquiry, 11*(3), 160-209.

Carnegie Council on Adolescent Development. (1992). *Task force on youth development and community programs. A matter of time: Risk and opportunity in the nonschool hours.* Washington, DC: Author.

Diaz, R., Neal, C., & Amaya-Williams, M. (1990). The social origins of self-regulation. In L. Moll (Ed.), *Vygotsky and education* (pp.127-154). New York: Cambridge University Press.

Dignath, C. & Buettner, G. (2008). Components of fostering self-regulated learning among students. A meta-analysis on intervention studies at primary and secondary school levels. *Metacognition and Learning, 3*(3), 231-264.

Guy, S., Isquith, P., & Gioia, G. (2004). Be*havior rating inventory of executive function--self-report version: Professional manual.* Lutz, FL: Psychological Assessment Resources.

Keating, D. (2004). Cognitive and brain development. In R. Lerner and L. Steinberg (Eds.), *Handbook of Adolescent psychology* (pp. 45-84). Hoboken , NJ: John Wiley & Sons. Inc.

Larson, R. & Hansen, D. (2005). The development of strategic thinking" Learning to impact human systems in a youth activism program. *Human Development, 48*, 327-349.

Larson, R. & Angus, R. (2011). Adolescents' development of skills for agency in youth programs: Learning to think strategically. *Child Development*, in press.

Lerner, R. Brentano, C., Dowling, E., Anderson, P. (2002). Positive youth development: Thriving as the basis of personhood and civil society. In R. Lerner, C. Taylor, & A. von Eye (Eds.), *Pathways to positive development among diverse youth (pp.149-164).* New Directions for Youth Development. San Francisco, Jossey-Bass.

Perels, F., Merget-Kullman, M., Wende, M., Schmitz, B., & Buchbinder, C. (2009). Improving self-regulated learning of preschool children: Evaluation of training for kindergarten teachers. *British Journal of Educational Psychology, 79,* 311-327.

Rhodes, J. (2002). *Stand by me: The risks and rewards of mentoring today's youth.* Cambridge, MA: Harvard University Press.

Wyman, P., Cross, W., Brown, H., Yu, Q., Tu, X., Eberly, S. (2010). Intervention to strengthen emotional self-regulation in children with emerging mental health problems: Proximal impact on school behavior. *Journal of Abnormal Child Psychology, 38,* 707-720.

Zimmerman, B. (2000). Attaining self-regulation. A social cognitive perspective. In M. Boekaerts, P. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (p.13-39). San Diego: Academic Press.

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Just Keep Swimming: Developing Resilience through Outdoor Adventure
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"I think of 'just keep going'…like the character on 'Finding Nemo'…'just keep swimming, just keep swimming' [sings]. Even though all this stuff happens to you, keep going." –Lauren (participant)

Introduction

This study examined the effects of participation in a semester-long outdoor leadership program on levels of resilience. Of particular interest was the finding that males actually decreased in levels of resilience while females experienced increased levels. In this study, resilience is conceptualized as the ability to 'bounce back' after experiencing a negative event (Hartig, 2008). D'Amato and Krasny (2011) suggest that adventure-based programs can be effective in enhancing levels of resilience because of (a) spending extended time in pristine environments, (b) separation from normal life, (c) social support, and (d) the intensity and challenging nature of the experience. Ewert and Yoshino (2011) found a significant increase in resilience scores for students who participated in a three-week adventure experience. These findings suggest that the challenging and stressful situations often inherent in adventure experiences can help participants develop an adaptive system that will aid them during future negative events.

Methods

Two primary questions arise from work on resiliency: First, can qualities related to resiliency be acquired (Richardson, 2002)? Resiliency theory suggests a somewhat linear model in which an individual interacts with one or more disruptive events, goes through a period of readjustment, and possibly reintegrates resiliently back to baseline or homeostasis (Flach, 1997). The second question focuses on *how* adventure-based activities enhance the resiliency development process. This study employed a two-phase approach to investigate both of these questions.

In Phase 1, a modified resilience questionnaire (MRQ) was administered to students who were enrolled in a semester-long outdoor leadership program (N=18), as well as to students enrolled in a general leisure course (N=48), and in a one-credit leadership class (N=44). The mean age for all study participants was 20.5 (SD=1.6), and 57.8% of the participants were female. The MRQ is a 37-item instrument, developed from well-established resilience inventories (Barton & Pretty, 2010; Noto, Sato, Kudo, Kurata, & Hirota, 2005; Wagnild & Young, 1993), and tested in several adventure-specific studies (Kaplan & Berman, 2010). The pre-test was administered during the first week of the semester-long experience, and the post-test was administered during final exit interviews/last classroom session at the end of the semester.

Phase 2 took place one year later and consisted of semi-structured follow-up interviews with selected participants of the outdoor leadership program. These interviews were utilized as a means of member checking the results and interpretation of the data that were collected in phase one, while allowing for a dialogue about the concept of resilience. A deeper understanding of the participants' assessment of their own resilience development, as well as the particular male-female dynamics of the group emerged through the dialogic nature of this study phase. This phase was also strengthened by its longitudinal nature, affording participants time to consider their experience and subsequent personal growth and development. Interviews were completed

until theoretical saturation was reached and then transcribed verbatim. NVivo 9 was used to code and analyze the transcribed interviews.

Results

A repeated-measures two-way ANOVA was performed for the phase one data. These data demonstrated a significant interaction between gender and class on growth $F(2, 86)=6.1$, $p < .05$, $^2=.12$ (see Figure 1). For males, the general education class increased resilience, whereas the adventure education class and the leadership class decreased resilience. For females, the adventure education class and the leadership class increased resilience, whereas the general education class decreased in resilience. Figure 2 shows the gender by resilience interaction specific to the outdoor leadership program participants.

Figure 1: Resilience scores by class

Semi-structured interviews were utilized to better understand these findings. These interviews were designed to provide a broad understanding of the participants' program experience, with specific focus on gender and resilience. After a shared understanding of resilience had been established between the interviewer and interviewee, part of the interview process involved a discussion of findings displayed in Figure 2. A grounded theory approach was utilized to code and analyze the interview data for emerging trends and themes (Charmaz, 2002). All of the respondents talked about leadership, often immediately into the interview and without prompting. Students also spoke of challenging aspects of the program, negotiating relationships with one another, self-discovery and growth, resilience, and finally, aspects of gender differences.

Figure 2: Resilience by gender for outdoor leadership participants

Interview data indicate that the gender differences in the survey results may be partially accounted for by differences in self-perception, program expectations, and assessment of personal ability. For example, a male participant recounted entering the program with a high level of self-confidence and being "humbled" by the experience. A female participant had a similar interpretation of the data, concluding that both males and females gained resilience from their program experience, but may have assessed themselves differently at different points in the program. Other explanations included the gender ratio in the group (more females than males), participation in stereotypically "male" activities, emotions and personality of group members, learning humility, and ego.

Discussion

Several important findings emerge from this study. The first of these concerns the presence of a negative result, such as the decline in reported levels of resilience for male participants in this study. This finding raises a number of interesting questions such as the
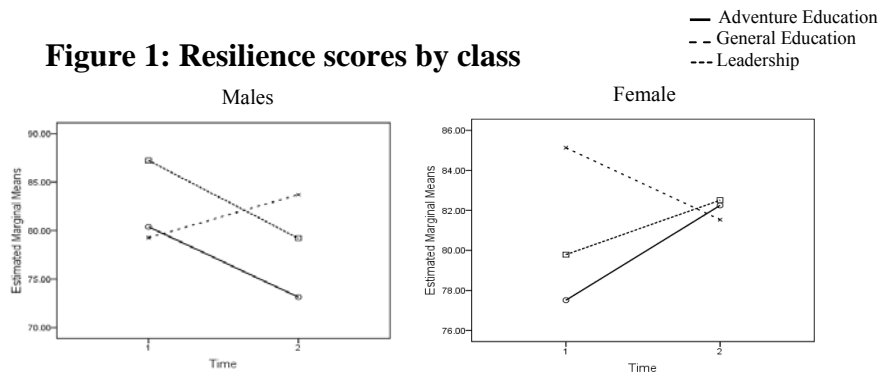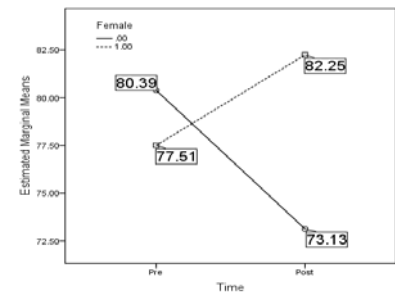
validity of self-assessment in pre-test/post-test design, and the appropriateness of retrospective pre-test designs in situations such as these. Gender may not only impact the way an individual experiences a program, but also the way in which he/she responds to survey questions. For example, Lam and McBride-Chang (2007) theorized that individuals may alter a response based on perceived gender appropriateness. While gender as a construct has been attended to in a variety of ways in the adventure education field, a number of important questions still remain, including whether males and females experience similar program outcomes (Neill, 1997). This research may begin to answer some of these questions.

       We should also attend to the assumption that a negative finding is a bad finding. If a comparison of a person's self-assessment of their personal levels of resilience actually does decrease throughout the course of an outdoor education program, perhaps this is a testament to personal growth and discovery or increased self-awareness. The strength of this study lies within the multiple layers of assessment and depth of knowledge afforded by employing multiple methods.

References

Barton, J., & Pretty, J. (2010). What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environmental science & technology, 44*(10), 3947-3955.

Charmaz, K. (2002). Qualitative Interviewing and Grounded Theory Analysis. In J. Gubrium & J. Holstein (Eds.), *Handbook of Interview Research: Context & Method* (pp. 675-694). Thousand Oaks: Sage.

D'Amato, L. G., & Krasny, M. E. (2011). Outdoor Adventure Education: Applying Transformative Learning Theory to Understanding Instrumental Learning and Personal Growth in Environmental Education. *The Journal of Environmental Education, 42*(4), 237-254.

Ewert, A., & Yoshino, A. (2011). The influence of short-term adventure-based expereinces on levels of resilience. *Journal of Adventure Education & Outdoor Learning (forthcoming)*, 1-16.

Flach, F. F. (1997). *Resilience: How to Bounce Back when the Going Gets Tough!* : Hatherleigh Press.

Hartig, T. (2008). Green space, psychological restoration, and health inequality. *The Lancet*.

Kaplan, S., & Berman, M. G. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science, 5*(1), 43.

Lam, C. B., & McBride-Chang, C. A. (2007). Resilience in young adulthood: The moderating influences of gender-related personality traits and coping flexibility. *Sex Roles, 56*(3), 159-172.

Neill, J. T. (1997). *Gender: How does it effect the outdoor education experience*.

Noto, Y., Sato, T., Kudo, M., Kurata, K., & Hirota, K. (2005). The relationship between salivary biomarkers and state-trait anxiety inventory score under mental arithmetic stress: a pilot study. *Anesthesia & Analgesia, 101*(6), 1873.

Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology, 58*(3), 307-321.

Wagnild, G., & Young, H. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement, 1*(2), 165-178.

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