

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



Compiled by

Amy Shellman, SUNY Cortland
Jim Sibthorp, University of Utah
Anderson B. Young, SUNY Cortland



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

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.

Almost 19 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 the publication, *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 *Research in Outdoor Education, Vol. 10*, which will appear in late 2010 or early 2011.

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. John Koenig and his staff at Bradford Woods make getting there and being there so comfortable. Special thanks go to Bridget Sutton, 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, David Compton, for their continued support of Bradford Woods and the CEO Research Symposium. They generously host our Saturday evening social. Human Kinetics Publishers donated books that some lucky attendees take home with them. We thank Gayle Kassing for nurturing this partnership between CEO and Human Kinetics over the years. We welcome back another business partner this year, Routledge/Taylor & Francis Group, publisher of the *Journal of Adventure Education and Outdoor Learning*. Our tenth CEO symposium coincides with the tenth anniversary of that fine journal. 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.

Anderson Young
For the CEO Research Committee

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

Leo H. McAvoy
University of Minnesota

Karen Paisley
University of Utah

Keith C. Russell
Western Washington University

Amy Shellman
State University of New York at Cortland

Jim Sibthorp
University of Utah

Coalition for Education in the Outdoors Research Committee

M. Deborah Bialeschki
American Camp Association

Camille J. Bunting
Texas A&M University

Alan Ewert
Indiana University

Michael Gass
University of New Hampshire

Karla Henderson
North Carolina State University

Leo H. McAvoy
University of Minnesota

Karen Paisley
University of Utah

Keith C. Russell
Western Washington University

Jim Sibthorp
University of Utah

Anderson B. Young
State University of New York at Cortland

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Coalition for Education in the Outdoors

Tenth Biennial Research Symposium at



Indiana University's Outdoor Center

SCHEDULE OF EVENTS

Friday, January 15, 2010

- 2:00 – 4:00 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 |
| | David Compton, Indiana University |
| | Bridget Sutton, Bradford Woods |
| Logistics | Bridget Sutton, Bradford Woods |
| Symposium overview | Andy Young |
| Research preview | Amy Shellman, SUNY Cortland |
- 5:00 Getting Acquainted - Facilitated by Brock University delegation
- 6:00 Dinner - *Baxter Dining Hall*
- 7:00 Research Presentation Session I – *Carr Center*
- Presider: Joy James, Appalachian State 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.*
- | | |
|------|---|
| 7:05 | Fostering leadership through a three-week experience: Does outdoor education make difference?
Alan Ewert, Jillisa Overholt, & Kiboum Kim, Indiana University |
| 7:25 | Children's perceptions of an environmental leadership program: Camp 2 Grow
Karla Henderson, North Carolina State University; M. Deborah Bialeschki & Barry Garst, American Camp Association, David Santucci, North Carolina State University |
| 7:45 | General Discussion |
| 7:50 | Break |
- 8:00 Issues and Challenges in Outdoor Education – *Carr Center*
- Sharon Todd and the CEO Research Committee
- 8:30 Poster Session Previews
- Re-thinking group development in adventure programming: A qualitative examination
Levi Dexel, Duke University; Bruce Martin, Laura Black & Aiko Yoshino, Ohio University
- The nature and meaning of outdoor leisure activities for Armenian youth: A case study of skiing as leisure
Jillisa Overholt, Indiana University
- Control group conundrum: The impact of short-term adventure experiences on the body image perceptions of women over forty
Sara Woodruff, Journe, & Denise Mitten, Ferris State University
- Learning outcomes from an adventure-based multicultural education program
Al Wright, California State University, Northridge

8:30 Poster Session Previews (continued)

Regulating rafting: The special-purpose vessels regulations and their influence on the Ottawa Valley's commercial whitewater industry

Ryan Howard & Tim O'Connell, Brock University

Using organized outdoor group experiences to understand sense of community and sense of place integration: A conceptual inquiry

Garrett Hutson, Tim O'Connell, Brock University; Sharon Todd, SUNY Cortland; Mary Breunig, Brock University; Anderson Young & Lynn Anderson, SUNY Cortland

An evaluation of Muddy Sneakers, an environment-based education program

Mandy Harrison & Joy James, Appalachian State University

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

Saturday, January 16, 2010

7:30 Breakfast – *Baxter Dining Hall*

8:20 Research Presentation Session II – *Carr Center*

Presider: Rob Andrejewski, Penn State University

8:30 Affinity for nature: Utility, theoretical foundations and development of a scale for youth
Adrienne Cachelin, University of Utah; Briget Eastep, Southern Utah University; & Jim Sibthorp, University of Utah

8:50 Problem solving and camp connectedness: Two new measures for the ACA Youth Outcomes Battery
Jim Sibthorp, Laurie Browne, University of Utah; M. Deborah Bialeschki, American Camp Association

9:10 Living and learning in a globalizing world: Comparative research between youth camps in North America and Central Asia
Stephen Fine, Simon Fraser University, & Tulshig Tuvshin, Mongolian Camping Association

9:30 Commitment to teaching for social justice in outdoor education studies: Beliefs and sources of beliefs
Lee Frazer, Fort Lewis College

9:50 General Discussion

10:00 Refreshment Break

10:20 Research Presentation Session III – *Carr Center*

Presider: Keith Russell, Western Washington University

10:25 The importance of trust in outdoor education: Exploring the relation between trust in outdoor leaders and developmental outcomes
Wynn Shooter, Monash University, Australia; Jim Sibthorp, University of Utah; John Gookin, National Outdoor Leadership School

10:45 Four-year longitudinal differences of outcomes associated with Outward Bound and National Outdoor Leadership School: A means-end investigation
Marni Goldenberg, Katherine Wassenberg, Jason Cummings, & Dan Pronsolino, California Polytechnic State University, San Luis Obispo

11:05 Comparison of Appalachian Trail and Pacific Crest Trail Hikers: Motivations and Benefits
Eddie Hill, SUNY Cortland; Marni Goldenberg, California Polytechnic State University San Luis Obispo; Edwin Gómez, Old Dominion University; Stephanie Fellows, California Polytechnic State University San Luis Obispo; & Barbara Freidt, El Paso, TX

11:25 Morale through the mouth: The impact of meal time on group development
Whitney Ward, Southern Illinois University

11:45 General Discussion

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

Fostering Leadership Through a Three-Week Experience: Does Outdoor Education Make a Difference?

Alan Ewert, Jillisa Overholt, & Kiboum Kim, Indiana University

“Public and private organizations continue to embrace the myth that they can develop effective leaders by investing millions of dollars and many hours in leadership training programs.”
(Allio, 2005)

For many outdoor education programs, leadership is one of the principal goals and desired outcomes from participation. While much of the literature supports the notion that leadership is a critically important characteristic for outdoor education programming (see Blanchard, Strong, & Ford, 2007; Martin et al., 2006; Priest & Gass, 2005), much less information is known as to whether leadership skills are actually improved through participation in outdoor education programs. Allio's (2005) statement above suggests that leadership programs often provide a cognitive experience based on leadership theory and leadership virtues but do not teach people how to actually lead. As he poignantly states, *“Taking a course on wise men may help you learn about them, but it seems unlikely to make you wiser! Leadership is no different.”* (p. 1072).

We disagree with Allio's assertion as it pertains to outdoor education and would argue that outdoor leadership training involves active and direct experience with many of the components associated with leadership such as decision-making, assessment, motivation, and goal-setting. A growing body of literature in the adventure-education field points to the positive relationship between leadership development and course participation (Hattie et al., 1997; Reynolds, et al., 2007; Sibthorp, et al., 2007). Moreover, it is the direct experience of practicing leadership that serves as the applied underpinning of this study (Quay, 2003). That is, we studied whether or not participants would report enhanced levels of leadership skills and abilities following completion of a three-week outdoor leadership experience. We expected this to be the case because of the numerous leadership opportunities afforded the participants involving direct experience, feedback, mentoring, and multiple learning challenges (Bennis & Thomas, 2002).

Methods

Two instruments were used to measure changes in leadership: a modified version of the Empowering Leadership Questionnaire (ELQ) (Arnold, et al., 2000) and the leadership section of the Outward Bound Outcomes Instrument (OBOI) (Frankel & Ewert, 2009). The modified ELQ is a 15-item questionnaire using a 100mm line anchored by Strongly Disagree and Strongly Agree, capturing five overriding factors: Leading by Example, Participative Decision-Making, Coaching, Informing, and Interacting with the Team. The Cronbach's alpha of the ELQ used in this study was .85. The OBOI consists of 24 items using a 100 mm line anchored by Strongly Disagree and Strongly Agree. Ten of the items relate to the leadership function and resulted in a Cronbach's alpha of .73.

Study participants were college students who were either enrolled in a semester-long outdoor leadership program or enrolled in a required class offered through the same academic department. In addition to several shorter field experiences, the outdoor leadership program involves a three-week expedition, which served as the focal point of this study. Data were collected from 89 participants, 18 of whom were engaged in the outdoor leadership program (11 male, 7 female). The other 71 individuals served as the comparison group (36 males, 47

females). For both groups, data were collected two days before and three days after the expedition component of the outdoor leadership program (21 days). Two weeks following the return from expedition, data were collected a third time from the treatment group only.

Results

Data were examined for accuracy, missing values, and the assumption of multivariate analysis. A single missing value on the outcome variables was replaced by the mean for the other values of the case. There were no univariate outliers recognized, but a total of ten values were identified as multivariate outliers using *Mahalanobis* distances with $p < .001$ and were deleted from further analysis (Tabachnick & Fidell, 2003). Although four outcome variables were measured including leadership, resilience, service, and character, this abstract only reports on the leadership variable measured by the ELQ and OBOI. A one-way analysis of covariance (ANCOVA) was employed in order to examine mean differences between female and male as well as treatment and comparison groups. In both analyses, the pretest was utilized as a covariate. *Levene's* test detected no inequality of error variance between the groups.

Results using *ANCOVA* indicated a significant group effect on both leadership measures after controlling for their pretest scores, ELQ, $F(1, 46) = 62.88, p < .05, \eta^2 = .217$; OBOI, $F(1, 44) = 7.14, p < .05, \eta^2 = .14$. In both measures, individuals in the treatment group reported higher leadership skill acquisition than the comparison group after adjusting for the pre-test scores. However, the leadership measures between male and female participants were not significantly different ELQ, $F(1, 44) = .04, p > .05$; OBOI, $F(1, 43) = 1.39, p > .05$.

Using only the treatment group, repeated measures of leadership skills as a function of time (pre, post, post-post) indicated a significant difference for both the ELQ, $F(1, 17) = 22.42, p < .001, \eta^2 = .633$ and the OBOI, $F(2, 28) = 14.71, p < .001, \eta^2 = .512$. The results indicated that leadership skills collected from both instruments linearly increased across the three time observations ($p < .001$). Further examination using paired sample *t*-tests revealed significant differences between the pre and post-post ($p < .001$) and post and post-post scores ($p < .01$) for the OBOI instrument and significant differences for the pre and post-post ($p < .001$) and post and post-post ($p < .01$) for the ELQ measurement.

Discussion

The data suggest that participants of the three-week outdoor leadership program report higher levels of leadership skills than do their non-treatment counterparts. Although this finding could be an artifact of self-selection or a halo-effect, the strong linear function exhibited in the treatment group suggests that leadership was a variable that continued to increase as time went on. This finding could point to a connection to the theory of competence/effectance first described by White (1959) and later integrated into Deci and Ryan's (1985, 2008) Self-Determination Theory (SDT). In this case, students learn about leadership within an outdoor education program and then continue to practice it because it satisfies the three motives underlying SDT, namely, the need for competence, autonomy, and relatedness. The data would suggest that following the initial learning period, leadership increases, probably as a result of practice, and this increased skill reinforces a sense of competence and effectance and results in continued skill development and practice. In conclusion, Allio (2005) may have a point relative to leadership training programs in the business world, but not in the outdoor education setting.

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Children's Perceptions of an Environmental Leadership Program: Camp 2 Grow

Karla Henderson & David Santucci, North Carolina State University

Barry Garst & Deborah Bialeschki, American Camp Association

Richard Louv's (2005) book, *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder*, rallied the outdoor community and initiated a national dialogue about the importance of children's connection to the natural world. This connection included both contact with nature as well as an understanding of how the natural environment impacts all other aspects of life. Traditionally, organized camps for children have been considered synonymous with nature-based opportunities while contributing to positive youth development. Researchers have demonstrated that intentional programming in camps increases the likelihood of achieving youth development goals (Marsh, 1999). Researchers also have found that people with stronger affective connections to nature demonstrate more environmentally responsible beliefs and behaviors (Berenguer, 2007; Kals, Schumacher, & Montada, 1999; Schultz, Shriver, Tabanico, & Khazian, 2004). The purpose of this study was to evaluate the perceived connections to nature that resulted from a leadership and stewardship program (i.e., *Camp 2 Grow*) that was conducted at organized resident camps during the summer of 2009.

Camp 2 Grow is a program developed by the American Camp Association (ACA) through funding from the Lilly Endowment Inc. to promote environmental leadership and stewardship. The program was pilot tested during the 2009 summer season and focused on teaching middle and high-school aged youth leadership knowledge and skills in a nature-based setting. The nucleus of the program is LifeKnowledge®, which was developed by the National FFA organization. The program was adapted to include a focus on environmental stewardship applications and was integrated into a typical camp schedule completed within a two-week period.

Each lesson included learning objectives and applications, instructions for delivery, and an intentional scope and sequence to help youth develop leadership competences. Outcomes of *Camp 2 Grow* were designed to include leadership development in the areas of teamwork, responsibility, friendship skills, community citizenship, independence, and social problem solving. In addition, participation included the design and implementation of community projects to improve the environment in campers' camps, homes, and communities.

In summer 2009, 24 day and resident camps received grant funding for the pilot test. The camps were accredited by the American Camp Association (ACA) and served campers from the metro areas of Indianapolis, Los Angeles, New York, Boston, and Chicago. A "train-the-trainers" approach was used with one or two key ACA volunteers from each metro area trained by FFA staff on the curriculum. These trainers then ran a camp-specific training in their metro area for camp directors or their designees to address the delivery of the curriculum and the evaluation process.

The evaluation element examined in this paper was the journals kept by campers from randomly selected camps from the metropolitan areas. The camps selected for journaling were not-for profit camps that had a high number of youth attending on camp scholarships. Each camper participating in the *Camp 2 Grow* program in the sample camp received a printed journal to keep that asked them to write about 11 different topics during the course of the camp session. Camp staff members were given the latitude to determine the best way to encourage the campers to write every day. The staff shared with the campers that a journal provides an opportunity to pause and reflect on their ideas. Campers were told not to worry about grammar or writing style

but to pay attention to their thoughts and feelings. The campers were also assured that the journals would not be graded and would remain private except for the evaluation team who would see them confidentially. Camper names were not linked to any of the information. Examples of the questions asked that related specifically to environmental stewardship included: “If I had to identify the 2 most important environmental issues in my community, I would say...”, “the reason why I think it’s important for kids to spend time in nature is...”, “how do you think young people like you can make a difference with some of the environmental issues facing the world”, “when I think about things that prevent me and my FAMILY (another question asked about FRIENDS) from spending time together outdoors, I think about...”, and “being at camp has influenced the way I think about nature and being outdoors by...”.

Camp directors copied the journals for the evaluators and returned the originals to the campers before they left camp. For this presentation, 27 journals were examined that represented about 150 entries. The campers participating ranged in ages from 11-15 years. All journals were open-coded by two researchers who compared their independent codes to reach consensus about the topics addressed in each question. These open codes were further grouped into themes that were confirmed in discussions between the researchers. Finally, selective coding was undertaken to summarize the conceptual results of the analysis and to determine the outcome patterns perceived by the campers.

The analysis indicated that the youths’ perceptions regarding the environmental leadership program were positive. They viewed leadership within a flexible framework and gained specific ideas about environmental issues in their communities and the role youth could play in addressing them. Youth described how the camp environment had aided them in becoming more responsible, enhanced career and life skills, and reinforced personal traits such as respect and independence that they could apply beyond camp.

The youth wrote about issues related to nature, the outdoors, and the environment. They articulated that aspects of pollution, global warming, and habitat destruction were all important environmental issues in their communities. They described that being outdoors was important because of the cognitive as well as affective knowledge they gained. Further, they indicated that camp enabled them to have new experiences in the outdoors, which helped them to appreciate the outdoors and the environment more. They believed that young people could make a difference regarding leadership for the environment by considering opportunities for community service as well as undertaking personal behaviors to help to “save the planet.”

The campers articulated challenges to getting outside that included the predominate influence and availability of media (e.g., cell phones, computers, gaming, TV), the busy lifestyles they and their families led, and the perception of family and friends that other things were “more fun” than being outside. In summary, the environmental leadership program at camp seemed to allow campers to consider further why the outdoors was important and the possible steps they could take to assure that the environment is maintained for the future health of children as well as adults.

The findings from these journals served as the basis for conclusions about the value of an intentional environmental leadership. Campers seemed to recognize that having the freedom to be in the outdoors also meant having responsibility to take a leadership role in making the environment better. This evaluation also served as a basis for making changes in the revised *Camp 2 Grow* curriculum and its delivery in the future as well as how intentional programming in camps about nature and environmental issues may lead to desired outcomes related to environmental stewardship.

Louv (2005) discussed the dual aspects of children not having exposure to nature as they have in the past as well as the need for an awareness of the environmental crisis occurring on the planet. Camps have long provided a means for learning to enjoy the outdoors but just enjoying does not mean that social action will be taken by campers. This *Camp 2 Grow* curriculum offered a way to address both the possibilities for learning about nature at camp as well as the need for environmental leadership so that future generations can also have the environmental quality that will enable them to enjoy outdoor activities.

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Contact Information:

(about the research) Karla A. Henderson, Dept. of Parks, Recreation and Tourism Management, Box 8004 Biltmore, North Carolina State University, Raleigh, NC 27695-8004, 919-513-0352, karla_henderson@ncsu.edu

(about the *Camp 2-Grow* curriculum) Barry Garst, Director of Program Development and Research Application, 5000 State Road 67 North, Martinsville, Indiana 46151-7902, 765.342.8456, ext. 312, bgarst@acacamps.org

Re-Thinking Group Development in Adventure Programming: A Qualitative Examination

Levi Dexel, Duke University

Bruce Martin, Aiko Yoshino, & Laura Black, Ohio University

Background of the Study

The Outward Bound Process Model (Walsh & Golins, 1976) is commonly used to describe the key elements of an adventure programming experience. One of the key elements described in this model is characterized as the unique social environment produced by the development of an interdependent peer group (Walsh & Golins, 1976). While a number of studies have been conducted exploring the nature of the group development process in adventure programming (Cassidy, 2007; Ewart & McAvoy, 2000; Sibthorp, 2003; Sibthorp, Paisley, & Gookin, 2007), the need for continued research in this area remains (Ewert & Haywood, 2000; McKenzie, 2000; Sibthorp, 2003). Specifically, researchers have called for consideration of group development models that better describe the group development process in the field of adventure programming (Cassidy, 2007; DeGraff & Ashby, 1996; McAvoy et al., 1996). A number of alternative models exist: sequential models (Jones, 1973; Tuckman, 1967; Worchel, 1994), non-sequential models (Chidambaram & Bostrom, 1996; Gersick, 1988; McGrath, 1991) and the integrative model (Wheelan, 2005).

The purpose of this study was to examine the developmental process of a group within an adventure programming context, specifically assessing the efficacy of Tuckman's (1965, Tuckman & Jensen, 1977) model of small group development. The researchers were interested in exploring factors associated with the development process within an adventure programming context and considering alternative models of group development that might better describe the development of the group in this study.

Methods

The researchers relied on a case study approach (Merriam, 2001) and grounded theory methods and techniques for collecting and analyzing the data (Glaser & Strauss, 1967). The participants in this study included ten undergraduate and two graduate students participating in a Wilderness Education Association (WEA) National Standards Program (NSP) course sponsored by a large Midwestern university. The course consisted of three phases involving three different environments and modes of travel: sea kayaking, backpacking and canoeing. A case study approach was appropriate, because the case—the group experience during the course—was bound by time and activity (Creswell, 2003). Data sources included participant observation, audio-taped group discussions, participant journals, and course artifacts. Data were analyzed using both open coding and focused coding (Emerson, Fretz, & Shaw, 1995; Lofland, Snow, Anderson, & Lofland, 2006) to elicit themes related to group development. A deductive analysis ensued using Tuckman's model of small group development (Tuckman, 1965; Tuckman & Jensen, 1977) to evaluate the effectiveness of this model in describing the group development process in an adventure programming context.

Results

The inductive analysis revealed four primary themes (or factors) related to the process of group development that had both positive and negative impacts on group development during the expedition: *goals*, *roles*, *communication*, and *decision-making*. Conflict between personal and group *goals* negatively impacted the group's development. *We are all pretty set on our own*

personal goals, which is not good when they conflict with the whole group... I don't think that we have all come together as a group yet. This conflict between goals created a rift in the group and, consequently, a lower level of group cohesion and performance. Members of one clique were motivated to attain group goals and function at a high level while members of the other were more focused on achieving personal goals.

Students occupied both formal and informal *roles* during the course that influenced group development both positively and negatively. *One issue with the management on the water yesterday was that the smoother was having a difficult time keeping up with the group...* The lack of adequate skill required of a participant in a significant *role* resulted in lower group performance. In other instances participants who possessed specific skills were called on to perform tasks on a routine basis, creating an informal role for themselves.

The quality of *communication* among group members, especially the leader (LOD) was also an important factor in the development of the group. *Communication* was commonly commented on during debriefs of days when *communication* between the LOD and the group was poor. *I really liked how you told us what your expectations were and that you called the group out when they were not meeting them.*

The decisions made on a daily basis were a critical element in the development of this group. A decision to make a major itinerary change was made early on in the course, which impacted the development of the group and escalated the division of the group. However, when the group was included in the *decision-making* process, they were more vested in the decision and typically performed at a higher level.

The deductive analysis revealed that the group observed in this study experienced elements of Tuckman's model of small group development. However, the group did not move through the stages in a linear fashion, as described by the model, and the model failed to describe many aspects associated with the group's development. For instance, the model did not account for the development of formal and informal sub-groups.

Discussion

The inductive analysis revealed four themes—*goals, roles, communication, and decision-making*—that are components of group development commonly referenced in group development literature (Johnson & Johnson, 2003; Rothwell, 2004; Wheelan, 2005). These findings demonstrate that groups in an adventure programming context experience developmental processes similar to those of groups in other settings. The significance of these factors in the group development process merits further consideration.

While Tuckman's model did not fully account for the process of group development within this study, an alternative model seems to accurately do so. Wheelan's (2005) Integrative Model of Small Group Development accounted for the four themes that were identified through the inductive analysis and was able to accurately explain the observed factors that both fostered and hindered the development of the group. This model accounted for the fact that this group did not have major conflict until after goals had been established and the group was functioning. The model also accounted for the group reverting to prior developmental stages as well as the development of sub-groups.

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Contact: Levi Dexel, e-mail: ldexel@duaa.duke.edu, Phone: 919.613.7536

The Nature and Meaning of Outdoor Leisure Activities for Armenian Youth: A Case Study of Skiing as Leisure

Jillisa R. Overholt, Indiana University

Background

Research supports the idea that leisure positively influences psychological well-being (Coleman & Iso-Ahola, 1993; Driver & Bruns, 1999; Tinsley & Tinsley, 1986). However, the exact nature of this relationship is still imprecisely understood, particularly from an international perspective. Coleman and Iso-Ahola (1993) posit that this relationship is due to the social networks developed during leisure participation and to a general disposition reflecting self-determination. The limited research done in North America supports this perspective, but the examination of benefits from participation in outdoor leisure activities in the context of other non-North American cultures is limited. In today's global society, greater understanding of other cultures, especially in the realm of lifestyle and well-being, is highly relevant and important both to the provision of leisure services and to the development of outdoor and experiential education programs.

The purpose of this study was to further understand the differences between formal and informal leisure participation and their connection to well-being, especially in an underrepresented population and country (i.e., Armenia). This study investigated the ways in which Armenian youth perceive the meaning and potential benefit of outdoor leisure activities within a framework of psychological well-being and free time boredom. More specifically, Armenian youth who participate in a formal cross-country ski team were compared with youth who ski informally or choose other leisure activities. Of particular interest were the reasons for which youth chose whether or not to participate, and the meanings they assigned to their participation in this free activity that was available to all members of the village.

Methods

This study used a mixed-method approach, primarily relying upon qualitative data generated through the use of focus groups, as well as two survey questionnaires --the Free Time Boredom Assessment (Ragheb & Merydith 1995), and the Ryff Scale of Psychological Well-being, short form (1989). The subjects (n=24) for this study were divided into two groups--a study group of cross-country ski participants and a group of non-skiers. Focus groups were comprised of 5-7 youths, with a total of four focus groups being conducted. The survey tools were translated into Armenian and focus groups were conducted in Armenian. Data generated during the focus groups were translated and transcribed by the researcher and then analyzed and coded according to emerging themes. The survey instruments were analyzed using the Mann-Whitney U test. Qualitative data were then compared with the quantitative data from each of the questionnaires.

Results

This study was undertaken as an exploratory endeavor in order to understand (1) the nature and meaning of leisure in Armenian society, and (2) the relevance of existing models of leisure theory to the Armenian culture, with particular regard to those who engage in cross-country skiing. The results of the survey instruments indicated that significant differences did not exist in any of the components of free time boredom or psychological well-being. However, the significance score for mental involvement (.132) and the overall free time boredom score (.203)

were appreciably lower than the other components of free time boredom: physical involvement (.532), meaningfulness (.802), and speed of time (.640). Larger sample sizes and a better understanding of the questionnaire on the behalf of the participants may have lead to significance in these cases.

In the analysis of the qualitative data, several topics emerged: time, resources/limitations, future/career development, free time boredom, social networks, and identity. After coding and analyzing the qualitative data, these topics were then grouped into three main themes: leisure perceptions, skiing as serious leisure, and application of self-determination theory. Discussion generated during focus groups showed that skiing can be considered a form of serious leisure for those who are members of the team. Team membership resulted in identity formation and self-determined behavior as evidenced by a sense of direction and feeling of control over the future. For example, when asked the question “what do you see for yourself in the future?” the overwhelming response from the non-skiers indicated that they felt little to no control over their own future. One boy stated “whatever we imagine, it won’t be like that.” Another said “nobody can imagine what the future will be like because the future does not depend on us. That’s how it is.” A girl stated “my future? I don’t decide, God will decide and we will see.” While these types of responses are not out of the ordinary for Armenian children, they were starkly contrasted by the skiers who generally had a good idea of what they wanted to do and were confident that they could accomplish their goals. For example, one skier responded “In my future I wish to become an Olympic ski champion.” When asked if there was an opportunity for that, he responded “yes, if we exercise, the opportunity exists, it is connected to us.”

The free time activities available to youth in this village were limited to the ski team, an occasional pick up soccer game, and spending time with friends in an unstructured setting. The ski team was open to any youth who was interested—there were no try-outs or requirements and new members were recruited every year. Non-participation was often the result of parental control, which was typically related to gender (i.e. skiing is not appropriate for girls) or academics, (i.e. the child needs to focus on his/her studies in order to get a good job). For these reasons, some youth skied with the team, but were not formal members, and did not appear to receive the same benefits as those that were. In a few cases, youth were simply not interested in skiing.

An examination of the quantitative and qualitative data demonstrates two salient points—first, the measure of free time boredom lacks construct validity in this particular case. The ski team members did not consider skiing to be free time or leisure (although they were not able to articulate what it was), thus there was no difference in the “free time” being considered for the questionnaire. Second, the theory of self-determination (Ryan & Deci, 2000), may play a role in the connection between leisure and well-being that the psychological well-being questionnaire was unable to measure. That is, findings from the focus group discussion were aligned with the three factors commonly associated with self-determination—autonomy, competence, and relatedness—but this finding was not reflected in the questionnaire responses. This may have been a result of utilizing the short form of the questionnaire, or because of issues with translation and reverse coding. Future studies should use a longer version of the Ryff scale in lieu of the Free Time Boredom Assessment.

Discussion

Despite the small sample size, this study demonstrated that formal involvement in outdoor leisure activities (i.e., ski team membership), resulted in a greater sense of identity and a

greater sense of control and purpose in one's life than involvement in informal leisure activities. Particularly, ski team members had more concrete goals and ideas of what their future might hold, and were more confident that they would have the ability to reach their aspirations. These indications of self-determination were specifically linked to cross-country skiing, but probably have broader linkages to the social support, adult involvement and skill development that take place within the ski team setting. Larger sample sizes and methodology that is more culturally amenable and easily understood by the participants may have resulted in more robust findings.

While the cross-country ski program identified in this study is more analogous to an athletic program, it carries many similarities to outdoor education type programs, such as a group or social atmosphere, direction and education provided by caring adults, and challenging activity that takes place in an outdoor setting. Often, outdoor leisure and outdoor education activities require little equipment or formal space and thus could easily be initiated in the villages and towns of the developing world. As outdoor education broadens its scope to include an expanding array of countries and cultures, an increased understanding of the benefits and constraints as reported by youth who engage in this type of program may help us to better create and execute programs in nations similar to Armenia.

Fostering opportunities for leisure can be an important component of well-being and life satisfaction (Iwasaki, 2006). In particular, outdoor leisure activities may provide opportunities for enjoyment and development beyond that of simple free time activities. These findings carry implications for both practitioners and future research. Studies of greater depth should be undertaken to determine the true benefit of outdoor leisure activities in the developing world.

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Control Group Conundrum: The Impact of Short-Term Outdoor Experiences on the Body Image Perceptions of Women over Forty

Sara Larson Woodruff, Journe & Denise Mitten, Ferris State University

Introduction

While the overall aim of this project was to conduct a pilot study to help the researchers better understand connections between short-term outdoor adventure experiences and body image in women over forty, a secondary aim was to test methods for gaining this information. In particular, ways to make valid control group comparisons were explored. Control groups are used as a standard for comparison in experimental studies. Control groups ought to be similar in relevant characteristics to the experimental group and though they do not receive the experimental intervention, they may receive a placebo. While ideally people would be randomly selected and randomly assigned to both the experimental and control groups, this often is not possible. Sometimes people are selected on a pseudo-random basis or purposefully. A control group is challenging to operationalize in many research situations, especially in outdoor interventions. The authors wish to explain their work with a control group for this research and attempt to initiate a discussion about the concept of control groups and the use of control groups in outdoor education research.

Methods

This study attempted to establish:

- A control group intended to include individuals with no or limited experience in outdoor adventure activities,
- A short-term adventure group designed to consist of individuals who had a defined level of outdoor adventure experience, and
- A case-study group designed to consist of individuals who had a defined level of outdoor adventure experience, had participated on a four-day canoeing and yoga trip and participated in an interview designed to illicit a narrative of their reflections on their experience immediately following that trip.

For all groups quantitative and qualitative data was obtained utilizing a 32-item on-line questionnaire including, demographic questions, close-ended questions concerning physical attractiveness and effectiveness, Secord and Jourard's (1953) Body Cathexis Scale (BCS), and open ended questions about women's body image. Reliability of the BCS "has been established in reports of a test-retest coefficient of between .84 and .91" (West-Smith, 1997, p. 44).

In order to refine previous research about women, body image, and outdoor these researchers sought to identify the control group. Specifically, a question in the survey was modified to include the response option: *I am not interested in participating in outdoor adventures*. This option was included to assist in determining a set of participants with less outdoor adventure experience than the experimental group in this current research and West-Smith's research population in her 1996 study.

Potential participants for the control group were originally contacted via phone or e-mail utilizing a convenience sampling through a preexisting listserv from Balance Ministries, a women's retreat company. A snowball sampling, a method employed to "identify cases of interest from sampling people who know people, who know people who know what cases are information rich" (Patton, 2002, p. 243) and who will be good research participants, was then

utilized by asking the original survey recipients to send the survey to their friends. In this sampling, parameters for the control group were extremely broad limiting only for age and outdoor trip experience. The control group consisted of 21 women who completed the on-line survey and were aged 40 or older. The adventure group consisted of 17 women responding to the questionnaire and the case-study group consisted of five participants for whom interviews were conducted following a four-day canoe trip.

Results

Demographic similarities between the control group and the short-term adventure group were clear. Both groups were primarily Caucasian, heterosexual, and economically middle and upper class. These findings are consistent with previous research showing that higher income levels increase the likelihood of participation outdoor adventures (Drogin, 1993, as cited in West-Smith, 1997, p. 99). Also similar to West-Smith's 1997 study, both the short-term adventure group and the control group reported overall negative feelings about their weight. The outdoor adventure activities in which all groups (the short-term adventure group, the control group and West-Smith's group) reported the most frequent participation were the same: Walking and hiking.

Initially, the groups were predetermined with the assumption that the control group participants would have significantly less experience than the short-term adventure group. However, a number of the participants in the control group reported higher levels of experience than expected and initial analysis determined that comparisons between the two groups were not statistically significant. As a result, a Pearson product-moment correlation coefficient (r) was utilized to determine correlations among six variables: importance of being physically attractive, the importance of being physically effective, self-rated level of physical attractiveness, self-rated level of physical effectiveness, BCS mean, and outdoor adventure experience.

Positive correlations (r) were found between

- levels of experience in outdoor adventures and
 - the importance of being physically attractive and effective (.361*);
 - perceived level of physical effectiveness (.412**);
- Importance of perceived physical attractiveness and
 - being physically attractive (.445**);
 - being physically effective and (.559**);
- BCS and perceived level of attractiveness (.604**).

**Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).* No correlation was found between level of experience in outdoor adventures and perceived level of physical attractiveness (.180) or the BCS (.023).

Discussion

While this study showed a difference between the control group and the treatment group questions were raised as to how to find or determine control group members. In adventure education pre and post tests seem to be a common methodology. Using a randomized control group is not often practical and using a non randomized control group can raise questions of validity. In this case a non randomized control group was used. The authors believe that pre tests can influence the group members, especially if the group members are predisposed to please people anyway. Therefore using a control group, even through the use of the snowball technique

could lead to a better comparison than using a pre and post test. In this experiment some control group members had more adventure experience than expected. Those members needed to be dropped from the control group. This situation leads to the question of how to employ potentially qualified control group members as well as contact and get survey results from them.

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Denise Mitten, PhD
Ferris State University
401 South Street, SRC 102
Big Rapids, MI 49307
mittend@ferris.edu
Phone (231) 598-7477

Sara Larson Woodruff, MA
Journe
1137 Ruggles Street
Roseville, MN 55113
journeon@gmail.com
651-204-6469

Learning Outcomes from an Adventure-based Multicultural Education Program

Alan N. Wright, California State University, Northridge

Abstract Summary

This study used a computerized text analysis of student essays to assess learning outcomes from a university class in multicultural education. The class used adventure education methods to achieve multicultural education goals. Adventure-based experiences from ropes courses or wilderness trips were an essential part of the curriculum in addition to community exploration assignments, papers, and class discussions on diversity issues. Students (n = 134) wrote a final reflective essay on the learning experiences from the class. Results show positive outcomes in self confidence, group experience, diversity awareness, and prejudice reduction.

Background and Key Literature Citations

The modern educational movement working to increase our understanding of one another is known as multicultural education. Commonly stated goals are that students will develop a sense of pride in their own cultural heritage, develop an appreciation for the ideals and values of others' cultures and an understanding of the common humanity all persons share. Educators aspire to increase students' skills in cross-cultural communication and cooperation (intercultural competence).

Although multicultural education programs have increased in number, the current review of the efficacy of these programs remains mixed (see Banks & Banks, 2004), establishing the need for additional assessments of these programs.

McKowan (2005) suggests three causes of prejudice that intervention programs can address to mitigate prejudice: *interpersonal*, which is based on the lack of contact with diverse groups; *cognitive*, which suggests that prejudice is the result of mistaken thinking and learning about those who are different; and *structural*, which focuses on the systemic conditions that perpetuate oppression and prejudice. The first two causes (interpersonal and cognitive) provide theoretical support for why the multicultural intervention program under study would reduce prejudice in participants when one considers the social and reflective nature of adventure education.

Adventure education has been used to address diversity awareness and prejudice reduction (Washington & Roberts (1999). Wright (1994) modified the Walsh & Golins model (1975) to make it more applicable to multicultural education goals and consistent with the research in prejudice-reduction programs (Brewer, M. B., & Gaertner, S. L. 2001). The model by Wright identifies six major components: *diverse group, challenge/risk, shared and structured task, supportive group, personal reflection, and dialogue*. Shared adventure assumes a *diverse multicultural group* which becomes a supportive small group experience. The positive group experience creates the opportunity for prejudice reduction based on meaningful interpersonal relationships. The positive group also creates the opportunity for *dialogue on diversity issues* that can be genuine and in-depth because of the supportive community which has been created. Group dialogue and reflection are central to cognitive reorganization and development of new attitudes. Dialogue on issues like hate crime motivations, personal prejudicial, and political correctness provide opportunity to shift thinking. Reflections can assist participants to see the connections between the diversity insights from the microcosm of the adventure group to the macrocosms of the larger society.

Subjects

Subjects ($n = 134$) represented nine class sections over a five-year period comprised of a multi-ethnic student population. Undergraduate students participated in a multicultural education class that involved shared adventure experiences. Six class sections (72% Ss) shared ropes course adventures whereas 3 class sections (28% Ss) shared wilderness based adventures. The Subjects represented a racial and ethnic diversity typical of the campus community with 51% representing diverse White Euro-American and 49% from a combination of Black, Chicano, and other diverse ethnic/racial groups. Gender represented a mix of 49.2% women and 50.8% men.

Data Collection

At the conclusion of the class students wrote an essay in which they were asked to reflect on the semester's overall learning experiences. Specific instructions were: *During the semester you have participated in different in-class experiences and out-of-class assignments. Think about one or two significant experiences during the course that you feel were instrumental in learning about the issues of personal identity and diversity (racial/ethnic/gender/religious). Please be specific - state what was actually done, said, read or written and by whom (yourself or others).*

Analysis

Content analysis represents several different methods of analysis to assess the meaning within written text and/or oral communication (Krippendorff, K. 2004). The data was analyzed with two different content methods. Three evaluators were trained in thematic content analysis. The thematic analysis focused on learning outcomes and specific learning events tied to those outcomes. The details of the thematic analysis are reported in another article by Wright (2009).

The essays were submitted to a keyword analysis using a computerized text analyzer program called TextAlyser (<http://www.textalyser.net>) as a second method of content analysis. The key words were tested for relationship with specific learning themes and learning events.

Results

Learning events with the highest meaning to the students were experientially activities in contrast to traditional academic activities of reading and writing. The learning outcomes listed by students represented a wide range of insights. Keyword analysis indicated greatest learning in the areas of Diversity/Prejudice Reduction, Group Experience, and Self-Confidence. Diversity/Prejudice Reduction keywords were twice as common as Self-Confidence keywords. Group Experience keywords were the second strongest cluster area. Adventure activity learning events were most strongly related to word clusters representing Self-confidence and Group Experience. Dialogue/discussion learning events were most related to Diversity keyword clusters.

Conclusion and Recommendations

The shared adventure of both ropes courses and wilderness experiences provide for the development of a supportive learning community that can reflect and dialogue about important issues of diversity and prejudice reduction. Practitioners should include reflective dialogue as part of adventure learning focusing on multicultural understanding.

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Alan N. Wright, Ph.D., is a Professor in the Department of Recreation and Tourism Management at California State University, Northridge, USA. E-mail: awright@csun.edu

Regulating Rafting: The *Special-purpose Vessels Regulations* and Their Influence on the Ottawa Valley's Commercial Whitewater Industry

Ryan Howard & Tim O'Connell, Brock University

Background

Whitewater rafting has the potential for high levels of risk exposure when compared to lower risk activities such as backpacking (Greenway, 1996; McLaughlan, 1995). Within the whitewater rafting industry, various certification, accreditation and training schemes have been implemented in an attempt to mitigate this risk. In the Ottawa Valley (Ontario, Canada) rafting industry, many of these schemes have been used to manage the industry's risk exposure without third party (i.e., government) intervention. In other whitewater adventure industries, third party intervention and regulation have caused divided risk mitigation standards, mitigation and certification competition, dilution of industry wide standards, and exaggerated safety concerns (Chisholm & Shaw, 2004). Transport Canada, an agency of the Canadian Federal Government, has enacted new regulations (*Special-purpose Vessels Regulations (SPVR)*) that are directly aimed at controlling and enforcing minimum standards for all commercial river rafting in Canada. The Ottawa Valley whitewater rafting industry is well known as an international leader in whitewater adventure recreation. Of the six main companies operating commercial whitewater adventure, five took part in this study.

Methods

This qualitative case study explored the perceptions of standards, qualifications, and policy within the Ottawa Valley whitewater adventure industry. Data were gathered using interviews of business owners and operations managers, river policy document analysis, and field notes as a participating raft guide during the 2008 summer season. Individual open-ended semi-structured interviews were conducted and transcribed. Through Atlas.ti the data were analyzed using pattern matching and meaning condensation.

Results

The results presented are a small section of a larger study, *A Case Study of the Ottawa Valley Whitewater Rafting Industry: Standards and Risk Management*. Levels of involvement and consultation were used to assess the amount of interaction between the government and rafting industry. These levels were found to be wide ranging and were reflected by a variety of factors such as: company size, owner involvement, and rafting philosophy. In general, respondents had heard of the regulations between one and eight years prior to their enactment in April, 2008.

Five key areas of regulation within the *SPVR* were investigated and used to highlight the effects of the regulations onto the rafting industry. These five areas included: mandatory swiftwater rescue training, quick release harness, record keeping, enforcement, and first aid kit contents. For example, the new swiftwater rescue training requirements state that, "overnight excursions in class III or above waters must include a person who holds a swiftwater rescue certificate with theoretical and practical training requirements." This regulation was seen by participants as being set at a lower level than was current local practice, and thus as non-beneficial for the Ottawa Valley industry. Not requiring mandatory swiftwater rescue training on excursions shorter than one 24 hour period was seen by respondents as "setting the industry back 20-25 years." Furthermore, the majority of all commercial whitewater rafting occurs in the day-

trip format in a shorter timeframe than what is regulated in the *SPVR*. Respondents working towards higher standards within the Ottawa Valley whitewater industry saw this large gap in the regulations as a setback.

Discussion

The overall influence of the *SPVR* was seen as not adversely affecting or further improving commercial whitewater rafting standards in the Ottawa Valley. This view is substantiated by two predominated factors. First, the scope these standards attempt to encapsulate (all commercial rafting within Canada) was seen to force the setting of regulations at the lowest common denominator. The regulations were set low enough that all operations across Canada would be able to conform to them with minimal capital and time investments. Second, the organizational structure of Transport Canada further limits the effectiveness of the *SPVR* by constraining and formatting the regulations to fit within Transport Canada's marine regulations system.

The overall affect on commercial whitewater rafting is discussed through five representative examples from the regulatory text. The *SPVR* were found to influence each company within the Ottawa Valley differently. The most prominent finding within the study is that the new regulations will not enhance risk management, standards, or safety practices within the industry, but could decrease these factors for some operators. This finding is problematic for operators that are already using higher level risk mitigation practices than the newly proposed regulations. It is feared that these new regulations will allow companies with lower standards to "hide behind" these inadequate regulations, lowering the overall standards within the Ottawa Valley rafting industry as a whole.

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Ryan Howard may be reached at: rhoward@brocku.ca
Tim O'Connell may be reached at: tim.oconnell@brocku.ca

Using Organized Outdoor Group Experiences to Understand Sense of Community and Sense of Place Integration: A Conceptual Inquiry

Garrett Hutson, Tim O'Connell, & Mary Breunig, Brock University
Sharon Todd, Andy Young & Lynn Anderson, SUNY Cortland

Whereas much research has focused on sense of community and sense of place as separate lines of inquiry, these concepts have rarely been explored together in the context of organized outdoor groups. Researchers suggest the benefits of psychological sense of community include a variety of pro-social behaviors including community involvement, increased well-being, increased emotional connection to others, and greater commitment to specific settings (Chavis & Wandersman, 1990; Kingston, Mitchell, Florin, & Stevenson, 1999; McMillan & Chavis, 1986). Similarly, place scholars suggest the sense of place concept can help facilitate pro-environmental actions, attitudes, and commitment as well as natural resource conflict resolution (Bonaiuto, Carrus, Martorella, & Bonnes, 2002; Borrie & Roggenbuck, 1996; Kyle, Graefe, Manning, & Bacon, 2004; Williams & Stewart, 1998). Sense of community and sense of place have individual histories of concept building, which has led many researchers to suggest both concepts are multifaceted, contextual, and dynamic (Chipuer & Pretty, 1999; Patterson & Williams, 2005). Further, Stedman (2002) suggests moving toward greater conceptual clarity of complex concepts (such as sense of place) requires researchers to focus on concept integration across different constructs, ideas, and situations. Thus, the purpose of this conceptual inquiry is to pose an integration of sense of community and sense of place within organized outdoor group experiences.

Background & Rationale

The benefits to participants across a variety of organized outdoor group programs include personal growth, personal development, and greater environmental awareness (among others) as a result of the interplay between physical settings and group dynamics (Ewert & McAvoy, 2000; Martin, Cashel, Wagstaff, & Breunig, 2006). Understanding the interplay between group and place is particularly important for outdoor programming because different inter-group relations have been shown to have an impact on socially constructed meanings attributed to places (Dixon, Reicher, & Foster, 1997). In other words, as sense of community changes, so might an understanding of place. If those involved with facilitating and managing organized outdoor group experiences wish to utilize the sense of community and sense of place concepts within their programs, they may be able to do this more effectively by understanding some of the ways the concepts can be better integrated together in theory and practice.

Like early scholarly inquiry on sense of community, geographers originally studied place in the context of territory, geographic location, and/or the physical aspects of settings (Roberts, 1996). The study of places has evolved to a social-psychological exploration of person-place relationships that define personal identities (Abram, 1996; Low & Altman, 1992). More specifically, the sense of place concept has been described through the meanings, emotions, thoughts, feelings, and behaviors that people use to describe ongoing relationships between themselves and a particular setting (Tuan, 1977). Tuan argues that understanding one's sense of place starts from the experience of an individual and sense of place expression is thought to be found in the symbolism people use to give a setting greater emotional sentiment.

Place researchers have illuminated some of the social and community dimensions of place experiences by suggesting individuals not only enjoy outdoor environments because of

their ability to provide a context to pursue specialized activities, but specific outdoor places also have provided a backdrop for identity construction and group acceptance (Williams & Patterson, 2008). Early research (e.g., Lee, 1972) noted the social aspects of place can help to complete identity formation and group acceptance through pursuing places that match with lifestyle preferences. Further, the social aspects of place have been explored in the context of ritual and group involvement at particular sites (Kyle & Chick, 2002). In an exploratory study on the subjective nature of place meanings, Hutson (2008) found that relationships were one of the defining features of place perceptions for a small group of outdoor professionals. In one of the few studies that explicitly explore sense of place and sense of community together, Todd, Young, Anderson, O'Connell, and Breunig's (2008) results indicate that sense of place did not significantly correlate to sense of community or group cohesion. However, Todd, et al.'s findings did show that groups that were more harmonious tended to have higher place identity scores. The research literature that integrates elements of sense of place and sense of community together seems to illuminate the possibility that individualized conceptions of place could be a catalyst for community formation.

Discussion and Implications for Practice

Given the role that social interactions play in defining place, and the importance of place in shaping outdoor group experiences, it would seem prudent to explore the theoretical overlap in sense of community and sense of place. By and large, this is absent in the literature, particularly that related to outdoor recreation and outdoor education. While further research and conceptual writing needs to be conducted in this area, this initial exploration of place and community integration leaves us with further questions that may be important for the field of outdoor education to consider including: (1) How might place-based teaching affect sense of community?, (2) How does feeling in community with a group affect one's sense of place?, and (3) How might outdoor educators foster sense of community and sense of place together? The purpose of this theoretical inquiry is to begin an initial conceptual exploration of these intuitively inseparable concepts with the hope of enriching the delivery of organized outdoor group experiences.

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An Evaluation of Muddy Sneakers, An Environment Based Education Program
Mandy Harrison & Joy James, Appalachian State University

Introduction

This pilot study is an evaluation of Muddy Sneakers, a new (Fall 2008) outdoor environment based education program in Brevard, North Carolina. The Muddy Sneakers curriculum is based on the North Carolina fifth or eighth grade standard course of study, with a focus on science. The program uses experiential learning methods to facilitate student understanding of the natural environment. For example, students, in the role of field scientist, might hike to a creek to “analyze water temperature, dissolved oxygen, pH, nitrates, turbidity, and bio-indicators. Students would then record their data and draw conclusions about patterns in water quality” (Muddy Sneakers 8th Grade Curriculum Overview, www.Muddysneakers.org). While many environmental based education programs are day-long field trip experiences, Muddy Sneakers is unique in that it uses multiple sites and multiple field trips (usually twice a month for three to six months per school year).

The purpose of this research was to evaluate the effectiveness of the Muddy Sneakers program in increasing academic performance of participants. Additionally, the purpose of this research was to create a baseline to inform future investigation of the efficacy of the Muddy Sneakers program.

Method

Eighty-two fifth grade students from two schools who were participating in the five times/school year or 12 times/school year Muddy Sneakers program took a pre- and post-questionnaire that reflected the 5th grade North Carolina standard end of grade (EOG) science test. The pre-test was given on the first day of Muddy Sneakers participation, and the post-test was given on the last day of Muddy Sneakers participation. Paired sample T-tests were used to analyze the difference between the pre and post-tests. Additionally, both previous year (2007-2008) 5th grade same school EOG science test scores and EOG science test scores from similar schools were compared to the current year (2008-2009) EOG scores of Muddy Sneakers participants.

Results

Paired sample T-tests showed a significant difference ($p < .000$) between tests, with an average score increase of approximately 20%. Additionally, preliminary 2008-2009 Science end of grade test results (North Carolina Department of Instruction, www.dpi.state.nc.us) indicate an increase in participating school Pisgah Forest Elementary 5th grade average scores from 54.3% proficient in 2007-2008 to 80% proficient in 2008-2009. In context, from the 2007-2008 school year, the of 1,268 5th grade science end of grade average scores, the top ten were between 100% proficient and 81.2% proficient. In this same ranking from 2007-2008, Pisgah Forest ranked 274th (similar ranking for 2008-2009 school year is as of yet unavailable). In essence, if Pisgah Forest '08-'09 scores are placed into the '07-'08 rankings, the scores would rise from 274th to 11th or 12th.

Discussion

The purpose of this research was to evaluate the effectiveness of the Muddy Sneakers program in increasing academic performance of participants. This research indicates that participation in Muddy Sneakers is very likely to have a positive effect on academic performance. However, this research has many limitations. First and foremost, because there is no true comparison group used in this study (a group similar to Muddy Sneakers participants who did not participate in Muddy Sneakers), it is difficult to know how much impact Muddy

Sneakers participation had on academic performance relative to other factors, such the ‘normal’ course of study throughout the school year. In an attempt to address this, comparisons were made between average end of grade science test scores. While these comparisons were favorable, they do not compensate for the lack of a comparison group. However, even given these limitations, it is likely that Muddy Sneakers did have a positive impact on participant academic performance.

The secondary purpose of this study, to set a baseline of research in order to inform future Muddy Sneakers evaluation research has been accomplished, and will indeed take into account and attempt to mitigate the limitations of the current study. For example, future research should include comparison groups of students who are not participating in Muddy Sneakers. Additionally, variables such as physical fitness, learning self-efficacy, and interest in the natural environment should be investigated. Finally, as data continues to be collected over time, the impact of Muddy Sneakers may become clearer.

Affinity for Nature: Utility, Theoretical Foundations and Scale Development

Adrienne Cachelin, University of Utah, Briget Eastep, Southern Utah University

Jim Sibthorp, University of Utah

Background

For most of human history, children's relationships to nature have developed through work and play that occurred primarily outdoors. However, with current technology, cultural norms, and changing lifestyles, children of the last few generations have had vastly diminished experiences with the outdoors. Insulated from direct experiences in nature, children often feel that the natural world is unimportant to everyday life (Louv, 2008). In the face of this disconnect, human behavior is disrupting natural systems central to ecological health (Wilson, 2006). Addressing this disconnect is crucial to both human and ecological health, and outdoor education professionals have a unique and vital role to play.

Outdoor education experiences can provide people with rich and necessary material to form realistic and lasting appraisals of nature. Such appraisals are the basis of emotional connection to, or repulsion from, the natural world. Thus, while outdoor experiences alone may not directly change people's environmental behaviors, they do offer a rich medium for the construction of long-term, sustaining, emotional impressions regarding nature's value. In fact, time spent outdoors in youth is frequently identified as the source of both positive attitudes about the environment and commitment to environmental protection (Chawla, 1998; Kals, Schumacher, & Montada, 1999). Thus, if our profession is to influence Louv's "nature deficit disorder" (2008), it can occur through youth outdoor and adventure education, where young people, who are still very much forming their impressions and values, are afforded experiences with nature. Offering evidence of the impacts of nature-based experiences on participants' affinity for nature will allow outdoor education scholars and professionals to demonstrate the centrality of outdoor education experiences in this increasingly important dialogue.

While several scales exist to measure aspects of the connection between people and nature (e.g., Dutcher, Finley, Luloff, & Johnson, 2007; Mayer & Frantz, 2004; Nisbet, Zelenski, & Murphy, 2008), none of these scales is appropriate for youth involved in outdoor education programs focused primarily on engaging experiences with nature rather than targeting environmentally-focused cognitive outcomes. Yet, it is these engaging experiences that can lead to emotional appraisals of nature. Simply stated, what nature-based outdoor and adventure education experiences offer is an opportunity for a person to establish an emotional (rather than a cognitive) relationship with nature. Thus, the creation of a measurement tool focused on capturing the affective elements of nature-based programming is important and valuable to outdoor education providers and scholars.

This study has three primary aims. The first aim is to offer an overview of how the emotion literature provides a theoretical background that informs the affinity for nature construct. The second aim is to describe the development and validation of a new measure of Affinity for Nature based on this theoretical framework. The final aim is to explore the value of affinity for nature in combating nature deficit disorder and fostering pro environmental behavior in the context of outdoor and adventure education.

Methods

Because affinity for nature is embedded in emotions, a theoretically-based understanding of emotion, along with a review of the associated literature informed our operationalization of affinity for nature. The authors and two experts from the American Camp Association reviewed

the proposed framework for the instrument. With discussion and agreement on the domains and definition, an item pool of 36 preliminary items was developed for further review by one of the authors. Items were evaluated for content relevance, content representativeness, clarity, and appropriateness to the target populations. This pool was then reduced to 24 items that were believed by the panel to most discretely and concisely capture the construct definition and domains in language appropriate for youth involved in outdoor programs.

As this instrument was being developed in partnership with the American Camp Association, response formats were chosen to be compatible with the existing Camper Outcome Battery (Ellis & Sibthorp, 2006). Most of the scale development and validity work was completed on the “current status plus retrospective change” format of the instrument (cf., Lam & Bengo, 2003). The perceived status version utilizes a 6-point scale anchored at False and True, which is completed for each of the item stems. The pilot sample, collected from three ACA accredited residential camps, included 309 campers with an average age of 12.7 years ($sd = 1.4$).

To assess criterion validity, measures for both Inclusion of Nature in Self (Schultz, 2002) and relatedness to nature (Nisbet et al., 2008) were hypothesized to be related to the status variable of Affinity for Nature. We also assumed that the instrument should not be age biased, so non-significant and negligible correlations between the scale scores and age were predicted.

Results

While remaining attentive to theory, framework, domains, and ultimate intent to create a reliable and usable scale, both item and scale level statistics were examined. Given these criteria, the authors retained the items judged best in each domain, resulting in a ten-item scale with representation from each domain: general feelings of attraction to nature (4 items), feelings of freedom in nature (2 items), feelings of comfort in nature (2 items), and feelings of oneness with nature (2 items). In addition, using the same criteria, a short, or five-item, version of the scale was also created. Alpha reliability coefficients are quite high for each these measures, ranging from .86 to .93. Hypotheses for correlations with the Experience subscale for the Nature Relatedness Scale, the Inclusion of Nature in Self Scale, and Age differences were met providing satisfactory evidence for criterion validity, and discriminant validity

Discussion

As evidence mounts that children who are disconnected from nature suffer from health issues including attention deficit disorder, obesity, and depression (e.g. Taylor, Krances, & Sullivan, 2001) and initiatives like No Child Left Inside (Chesapeake Bay Foundation, 2009) take hold, outdoor education providers will increasingly be called upon not only to cultivate affinity for nature in their programs, but also to show evidence of this cultivation. Equally important is the idea that affinity for nature is an essential prerequisite to pro-environmental behavior (e.g. Kals et al., 1999; Mayer & Frantz, 2004). Conservation advocates and educators recognize the importance of experiences in and affinity for nature. Orr (2004), Sobel (1996), Pyle (1998), and most recently Louv (2008), all of whom emphasize the need for outdoor experiences that will activate our emotional biophilia-based bond with nature, echo the idea that an emotional bond with nature fosters an environmental sensitivity that is prerequisite to pro-environmental behavior. Further, research into the reasoning of those who have selected careers in conservation bears this out (Chawla, 1998). As such, we believe that an increasingly important role for outdoor and adventure educators will be to create and measure nature-based experiences that help youth (and adults) have a greater affinity for nature leading to a greater likelihood that pro-environmental behaviors will take hold, and that the ailments correlated with nature deficit disorder can be diminished.

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Contact:

Adrienne Cachelin, M.Ed., University of Utah, Department of Parks, Recreation and Tourism
250 South 1850 East, Room 200, Salt Lake City, UT 84112
adrienne.cachelin@health.utah.edu

Briget Eastep, Ph.D., Southern Utah University, Department of Physical Education and Human Performance, 351 W. University Blvd. PEB 211, Cedar City, UT 84720
eastep@suu.edu

Jim Sibthorp, Ph.D., University of Utah, Department of Parks, Recreation and Tourism
250 South 1850 East, Room 200, Salt Lake City, UT 84112
jim.sibthorp@health.utah.edu

Problem Solving and Camp Connectedness: Two New Measures for the ACA Youth Outcomes Battery

Jim Sibthorp & Laurie Browne, University of Utah
M. Deborah Bialeschki, The American Camp Association

Research on summer camps has traditionally been able to show that youth benefit from the camp experience (e.g., ACA, 2005; Bialeschki, et al., 2007; Henderson, et al., 2007; Marsh, 1999; Mishna et al., 2001; Readdick & Schaller, 2005; Yuen, Pedlar, & Mannell, 2005). However, much of this research has been conducted by academics in partnership with camp programs, as research and evaluation is typically viewed by camps as complex and burdensome. Despite this perception, funding agencies increasingly have required systematic evaluation for outcome documentation as well as to support the creation of program theories and evidence-based practices in camps. To address these needs, the American Camp Association (ACA) began efforts to provide outcome assessment tools that were relevant, appropriate, and practical for use *by* summer camps. This battery of measures, currently known as the ACA Youth Outcomes Battery (Ellis & Sibthorp, 2006; Ellis et al., 2007), has continued to grow as funds have become available. During the summer of 2009, two new outcome measures, problem-solving and connectedness, were developed at the bequest of ACA's Not-for-profit Council and Committee for Advancement of Research and Evaluation (CARE) in the effort to expand the existing battery to include additional facets of positive youth development. Problem solving skills and connectedness have been identified as two critical aspects of positive youth development in the current youth development literature (Pittman et al., 2003).

Problem solving skills are most commonly considered a process that unfolds through four main domains: (a) problem definition, (b) planning, (c) decision making, and (d) evaluation of solution outcome (cf., D'Zurilla & Nezu, 1990; Zelazo et al., 1997). Problem solving skills are often further delimited for self-reported measurement as personal appraisals of problem solving; these self-reported appraisals are generally good predictors of actual problem solving skills (Heppner et al., 2004). School Connectedness is generally defined as "the student's personal relationship with school" (Libbey, 2004). In a synthesis of the school connectedness literature Libbey (2004) posits nine distinct domains of school connectedness, six of which are generally applicable to summer camps: (a) belonging, (b) likes school, (c) student voice, (d) peer relations, (e) safety, and (f) teacher support. School connectedness has been linked to a variety of positive outcomes for youth including reduced health risk behaviors (McNeely & Falci, 2004), academic achievement (Klem & Connell, 2004) and social adjustment (Battistich et al., 2004).

Therefore the purpose of this study was to develop measures of Problem Solving Confidence and Camp Connectedness that could reasonably and practically be used by summer camps to both document outcomes and to build evidence-based program models that inform camp design and implementation practices.

Methods

The methods for scale development were largely based on Classical Test Theory and the steps proposed by DeVellis (2003). The procedures also paralleled the process used with previous ACA outcomes. After the constructs were defined and the domains were specified from the existing related literature, items were generated to cover the necessary content domains. The response formats used were consistent with the previous versions of the ACA battery, and included both status and change stems (measured on 6 point scales) for problem solving and status (6 point scale) for connectedness. Items were then reviewed by the ACA CARE group for

content relevance, content representativeness, clarity, and appropriateness to the target population. A number of significant revisions resulted from this review process.

For criterion related evidence of validity, we used the Social Problem Solving Inventory for Adolescents (SPSI-A; Frauenknecht & Black, 1995) for the problem solving measure and adapted an existing measure of school connectedness (cf., You, 2008) to camp. In addition, as camp connectedness is theoretically related to developmental outcomes, measures of perceived competence and responsibility from the ACA Youth Outcomes Battery (Ellis & Sibthorp, 2006) were included on the connectedness pilot instrument. We hypothesized that if our measures were adequately capturing the constructs as intended, that sizable and significant positive correlations with the extant measures would be evident, with stronger correlation to more theoretically similar constructs. We also hypothesized that the instruments would not be age biased.

After formatting the scales for pilot data collection, the ACA arranged for six camps to administer the pilot instruments during the summer of 2009. The pilot instruments were designed to have four items per domain so that the two poorest performing items could be removed from the final versions of the instruments.

Psychometric data analyses included examination of the internal structure (reliability, item-to-total correlations, interitem correlations) of the individual instruments as well as cross-structure analysis (intercorrelations among scale scores and criterion measures and correlations between scale scores and age). Based on the results of these analyses, with attention to content coverage and validity, final versions of the scales were created retaining two items per content domain.

Results

A total of 221 participants from 3 camps completed the pilot version of the problem solving confidence scale; the sample was 75 % female, with an average age of 13.5 years. After examining item performance including the items' response distribution and the psychometric analyses, the best two items per domain were retained for the final version of the Problem Solving Confidence scale. As this scale included both status and change scales, internal consistency was calculated separately for both sets of items. For the initial item pool, both the status ($\alpha = .91$) and change scales ($\alpha = .92$) exhibited excellent internal consistency. Final eight-item versions of the scales were also internally consistent ($\alpha = .85$ status and $.87$ change). The initial status scale was positively and significantly correlated with the Problem Solving Skills Scale of the SPSI-A ($r = .60, p < .001$) exhibiting good criterion related evidence of validity.

A total of 336 participants from 3 camps completed the pilot version of the camp connectedness scale. The sample was 67 % female with an average age of 11.1 years. After examining item performance including the items' response distribution and the psychometric analyses, the best two items per domain were retained for the final version of the Camp Connectedness scale. Both the initial item pool total (24-item $\alpha = .93$) and the final scale (12-item $\alpha = .87$) were internally consistent. The final scale was positively and significantly correlated with the adapted school connectedness scale ($r = .69, p < .001$), the perceived competence scale ($r = .47, p < .001$), the personal responsibility scale ($r = .46, p < .001$), and uncorrelated with age ($p > .05$). Both direction and relative magnitude of all correlations were as hypothesized, providing good criterion related evidence of validity.

Discussion

Both scales, Problem Solving Confidence and Camp Connectedness, performed well and exhibited good evidence of reliability and criterion validity. Their parallel design and structure ensures compatibility with the existing ACA Youth Outcomes Battery (Ellis & Sibthorp, 2006)

and continued technical support from the ACA. As both of these scales were identified by camp practitioners as necessary and important to camps for outcome documentation and to assess camp practices, having usable and available measures should enhance camp administrators' ability to better evaluate existing programs. These measures may also contribute to the design and implementation of camp and outdoor programs that more effectively target and develop critical areas of positive youth development within a systematic quality improvement focus advocated by ACA and external parties over the last decade (ACA, 2007).

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Contact: Jim Sibthorp, University of Utah College of Health, Department of Parks, Recreation, and Tourism, Salt Lake City, UT, 84112. Jim.sibthorp@health.utah.edu. 801-581-5940.

Fostering Cosmopolitan Citizenship through Camp Experience: Comparative Research in North America and Central Asia

Stephen Fine, CAIS/Simon Fraser University, Vancouver, Canada
Tulshig Tuvshin, International Children's Center Nairamdal, Ulaanbaatar, Mongolia

Introduction

This comparative research is a cross-cultural study of two residential outdoor children's camps that explores learning within personal, socio-cultural and physical domains. Specifically, what learning is generic to all camp experience and what learning is socially or culturally mediated? Additionally from a cosmopolitan perspective, do the lessons learned at camp lead to a fuller understanding toward the concepts of peace, human rights, democracy, and their advocacy at the local and global level? In the true spirit of cosmopolitanism organizations such as the International Camping Fellowship (ICF) promote face-to-face and electronic networking of camp professionals, educators and researchers worldwide. The endeavour of the ICF is to bring the message of camp to the world community. Such was the inception of this research in the meeting and collaboration of two like minded camp people from opposite sides of the world.

Background

Theoretically the research design is based on concepts of experiential learning (Dewey, 1997 [1938]); Kolb, 1984) and contextual learning (Falk & Dierking, 2000; Fine, 2005) which interconnects the learner and the teacher within a spectrum of experiential episodes at personal, social and physical levels. Learning thereby encompasses cognitive, emotive, communal, tactile and spiritual domains. It is enduring and can be significant and/or life shaping (Fine, 2005; Henderson et al., 2007; Thurber et al., 2007). Canadian outcomes of camper and camp alumni experience (Fine, 2005) indicate that camp contributes significantly to learning in areas of: self-concept, self-regulation, self-efficacy, peer teaching, cooperation, teambuilding, socio-cultural understanding, and environmental ethics. These learning outcomes are also principles inherent to recognized models of "global" or "cosmopolitan" citizenship (Giddens, 1991; Hanvey, 2001; Osler & Starkey, 2003; UNESCO, 1995). Our comparative study was undertaken in Mongolia. The larger Mongolian camper/alumni population would help establish reliability of Canadian findings. Additionally, the Central Asian setting would identify any socio-cultural variables and any comparable outcomes which might be universal and/or have the capacity to transcend national and/or cultural boundaries.

Methods

A mixed-methods approach was taken with triangulation achieved through 1) camp director dialogue and 2) Likert-scale surveys with open-ended questions for current campers and 3) camper/staff alumni. Face to face dialogue through a translator took place on several occasions between the camp directors in addition to camp visits in Canada and Mongolia. The Canadian study additionally employed alumni interviews which were substituted with open ended questions for Mongolian alumni due to number of participants, distance and language. Canadian data accounts for 113 campers and 18 alumni. Mongolian data accounts for 925 campers and 218 alumni. Quantitative data measured camper and alumni perceptions of camp experiences within personal, socio-cultural and physical domains. Qualitative data provided thick description to further inform the quantitative data. Data from campers along with that of alumni

converge to support or refute the philosophical intension or mission statement of the camp directors.

Results

Our Mongolian study supported the original research (Fine, 2005) as follows. In the personal domain camp experience increased self-regulation, self-confidence, independence and recognition of strengths, weaknesses and potentials. Habits of personal hygiene and action towards a fit and healthy lifestyle were established. Within the socio-cultural domain, participants improved communication skills, accepted others regardless of ethnicity or social standing, realized the value and practicality of teamwork, and improved skills in group planning and organization. Learning in the physical domain included a broader knowledge for sustaining clean air and water locally and globally, the value for contact with nature, and a commitment toward environmental responsibility. These outcomes are all consistent with the tenets of cosmopolitan citizenship.

The following variables were recorded for Mongolian and Canadian campers:

Camper Perception	Mongolian Campers	Canadian Campers
High level emotional of comfort	74%	38.9%
Communal living assists socialization	61.2%	37.2%
Benefits of informal learning setting	48.9%	77.9%,
Benefits of experiential learning	46.3%	58.4%,
Value of young mentors	60.3%	33.6%
Value of peer learning	28.3%	32.7%

Overall findings indicate that camps are optimal learning environments that transcend national and/or cultural boundaries and can effectively prepare youth for successful community interaction at local and global levels.

Discussion

Mongolia is a developing nation where children generally do not have leisure or recreation opportunities for socialization outside of the classroom or family unit. Education is formal and household chores normally complete daily routines. Camp is a unique and very different learning environment for these children. Social factors along with cultural attitudes toward formal and informal education may account for differences in camper perceptions. Schooling is a high priority for Mongolians as in most developing countries (UNICEF, 2007). However, although almost all Mongolian children receive camp as part of their extra-curricular education, camp is not a priority worldwide.

Perhaps in order to assure the development of cosmopolitan citizens, camp experience should become mandated as a compulsory component of education internationally. Societies worldwide are increasingly influenced by global events. One manifestation is the broad migration of peoples which has resulted in demographic changes to our local communities. Camp offers opportunities for the positive development of youth regardless of cultural background and can assist them to take an active role globally as well as in their local communities.

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Contact:

Stephen Fine
3309 13th line, RR3
Cookstown, ON L0L 1L0
Canada
(905) 775-2694
fine@hollowscamp.com
www.hollowscamp.com

Tulshig Tuvshin
International Children's Center Nairamdal
Ulaanbaatar 18220, Mongolia
Tel: /976-11/-496-001
nairamdl@mongol.net; tsttuvshin@yahoo.com
www.nairamdal.mn

**Commitment to Teaching for Social Justice in Outdoor Education Studies:
Beliefs and Sources of Beliefs**
Lee Frazer, Fort Lewis College

Background

This study examined *beliefs as well as sources of beliefs* of college faculty in outdoor education related academic programs (i.e., outdoor education studies), associated with commitment to “teaching for social justice,” specifically, and critically-oriented teaching, more generally. As Bell and Griffin (1997) write, social justice “includes a vision of society in which the distribution of resources is equitable” and in which “all members are physically and psychologically safe and secure . . . individuals [who] are both self-determining (able to develop their full capacities) and interdependent (capable of interacting democratically with others). . . . [and] social actors who have a sense of their own agency as well as a sense of social responsibility toward and with others and the society as a whole” (p. 3).

A number of developments over the past decade, within education, generally, and outdoor education, more specifically, suggest a growing interest among practitioners and scholars in issues of social justice. For instance, in 2004, the American Educational Research Association (AERA), the world’s largest association of educational researchers, inaugurated its annual “Social Justice in Education Award” to recognize individuals “who have made an extraordinary impact on social justice by producing and/or applying educational research to policy and/or practice” (AERA, 2006, p. 4).

Within outdoor education, a few conspicuous examples are noteworthy. Among associations, for instance, the Association for Experiential Education (AEE) (one of the largest associations of outdoor and experiential educators in the world) whose vision is to make a “more just and compassionate world by transforming education,” recently held its 35th annual conference in Little Rock, Arkansas, to honor the 50th anniversary of the Little Rock Crisis (AEE, 2007), a pivotal event in the Civil Rights Movement. In addition, the North American Association for Environmental Education (NAAEE), recently announced a plan, at a National Press Cub gathering, to inspire “environmental awareness in communities of color” and forge “innovative partnerships to address environmental justice issues” (NAAEE, 2007).

As my review of the literature revealed, research on social justice teaching perspectives and practices in outdoor education studies (OES) is absent. However, there is a significant imperative to explore this dimension of social justice education within this setting considering the role of higher education in effectuating social change (Astin & Astin, 2000), the prevalence of social justice-oriented outdoor educators within the academy (Warren & Loeffler, 2000), and the interest in justice-oriented practices and philosophies in other areas of educator preparation, including teacher education (Banks, 2004; Cochran-Smith, 1999, 2004; Darling-Hammond, French, & Garcia-Lopez, 2002) and principal preparation (Brown, 2004; Gerstl-Pepin, Killen, & Hasazi, 2006). As my literature review also revealed, the philosophy and practices of social justice-oriented teaching, in a variety of settings, is well articulated within the literature on critical pedagogy, multicultural education, and social justice education.

Pratt’s (1998) model of teaching philosophy and “aspects of [teacher] commitment” in adult and higher education served as a guiding theoretical framework for this study. As he notes, teacher “commitment . . . is revealed through the way a person teaches (actions), what a person is trying to accomplish (intentions)” in addition to “statements of why those actions and intentions are reasonable, important, or justifiable (beliefs)” (p. 7). As Pratt also notes, while “a

teacher's commitment is usually directed more toward one or two elements than others...this does not mean they have no regard for other elements" (p. 7). Thus, this study set out to explore the nuances of commitment, in this case commitment to social justice, as one major aspect of the teaching philosophies of college faculty known for their interest in social justice through not only teaching, but scholarship and service to the outdoor education profession at large.

Methods

This investigation utilized grounded theory to construct a substantive theory about beliefs, as well sources of beliefs, associated with commitment to teaching for social justice in outdoor education studies. Grounded theory is a qualitative research methodology "particularly suited to investigating problems for which little theory has been developed" (Merriam and Simpson, 1995, p. 112).

Considering the need to credibly identify college faculty with a commitment to social justice in their teaching, I selected participants purposefully using snow-ball sampling (Gall, Gall, and Borg, 2003). I eventually accumulated a total of over thirty recommendations from others, over half of which were screened out for not meeting at least two criteria. Eleven eventually agreed to participate. However, I did not interview one due to frequent scheduling problems; in the end, this resulted in ten study participants.

Data was collected using open-ended interviews and field notes. Collection was guided by the concept of theoretical sampling, a successive analysis and conceptual development method which requires the investigator to begin first use with "insights gleaned from early analysis" to decide "where to go next for data" (Merriam and Simpson, 1995, p. 115). Interview questions focused on beliefs about one primary question: *Why faculty see social justice as important* to the study of outdoor education. In addition, I queried faculty on the *sources* for these beliefs.

Results and Discussion

Findings from my analysis suggest five major beliefs – regarding the relevance and importance of social justice to OES – drive faculty with a commitment to social justice: 1) they value and wish to advance diversity and equity within the outdoor education field; 2) they see education, in general, as a vehicle for social change; 3) they believe social justice issues to be ubiquitous in outdoor education; 4) they view the content and methodology of outdoor education as an effective tool for advancing social change, promoting moral and social development, and teaching about issues of justice and equity; and 5) they believe many students in outdoor education (and related) degree programs bring an interest in social justice.

Collectively, my analysis suggests six sources for participants' beliefs: 1) involvement in social and environmental activism; 2) study of critical and/or feminist theory; 3) personal ethics, grounded in experience and/or religious beliefs; 4) one's own social and personal identity, including experience with oppression or living on the margins; 5) other people – including mentors, friends, public intellectuals, and professors they had in college – who have provided support and/or inspiration; and 6) various life events, stages, or experiences – some disparate and some similar among the participants.

The findings in this study resonate with the non-outdoor education literature (conceptual and empirical) associated with social justice and critically-oriented teaching perspectives, as well as with the more general discourse on social justice within the outdoor education literature. At the same time, the findings differ from earlier outdoor education literature on social justice in at least three ways. First, with the exception of Warren's (1999) study, these findings are derived from research, rather than intuitively from scholars and practitioners. Second, the outcomes of

this study shed light on two ill-understood topics: a) the nature of social justice and critically-focused teaching in OES and b) the implications for preparing OES students to teach and lead for social justice, as well as other ends which further the ideals of a critical social philosophy.

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Contact: Lee Frazer, Ph.D. Candidate, Fort Lewis College, Exercise Science Department, Durango, CO 81301, (970) 247-7353, frazer_l@fortlewis.edu

The importance of trust in outdoor education: Exploring the relation between trust in outdoor leaders and developmental outcomes.

Wynn Shooter, Monash University, Jim Sibthorp, University of Utah, John Gookin, National Outdoor Leadership School

Background: The presence of a leader is one common aspect of all programmatic outdoor education experiences and there is a growing body of literature suggesting that the outdoor leader is a highly influential aspect of multiday programmatic wilderness-based experiences. Further, there is growing evidence that the outdoor leader's personal attributes and character are important (Hobbs & Ewert, 2008) and are among the key variables that influence positive course outcomes (Schumann, Paisley, Sibthorp, & Gookin, 2009). It is logical to conclude that the interpersonal relationships that form between participants and leaders are worthy of our attention.

These relationships are complex and multidimensional, but one way that outdoor leaders can strengthen their relationships with participants is through gaining their trust (Mayer & Gavin, 2005; Colquitt, Scott, & LePine, 2007). Multidisciplinary research has demonstrated repeatedly that interpersonal trust in a leader or leadership team can influence outcomes positively. Many of these outcomes are highly relevant to outdoor education and outdoor leadership. For example, authors have reported that trust in a leader can positively influence cooperation, productivity, teamwork, learning, motivation, and commitment (Mayer & Gavin, 2005; Rotter, 1967; Tan & Tan, 2000). Alternatively, the absence of trust in one's leader can result in undesirable outcomes (Kramer & Cook, 2004).

Multidisciplinary studies have provided empirical support for a model that offers a clear and useful conceptual explanation of trust and trust development (Colquitt, et al., 2007; Mayer, Davis, & Schoorman, 1995). According to the Mayer et al., (1995) model, trust is not identified by a behavior, or by the action of risk taking, which is the outcome of trust, but by a psychological state identified by an attitude of willingness to be vulnerable to another party. This model emphasizes that one chooses the degree to which he or she will assume an attitude of trust in a leader based on the leader's attributes and the trustor's own unique propensity to trust. Given the current research indicating that the outdoor leader is a highly influential course component (e.g., McKenzie, 2003; Schumann et al., 2009; Sibthorp, Paisley, & Gookin, 2007), it is useful to consider this model in terms of its ability to provide an explanation for how outdoor leaders can establish trusting relationships with participants and thereby achieve course outcomes.

A series of three outdoor leadership studies has found support for Mayer and colleague's (1995) model and the hypotheses that leader attributes can influence participant trust (e.g., Shooter, 2008; Shooter, Paisley, & Sibthorp, 2009; in press). However, the rationale for these studies depended on conclusions drawn from a management context, which established the link between trust in a leader and positive outcomes (Colquitt et al., 2007; Tan & Tan, 2000). With the theoretical foundation established, an important next step in understanding the role of trust in outdoor leadership and outdoor education is to determine the relationship between trust in outdoor leaders and course outcomes. This link is yet to be explored within outdoor adventure education. Therefore, the purpose of this study was to examine the relationship between the trust an adventure education participant reported in their outdoor leaders and their own development over the course.

Methods: The National Outdoor Leadership School (NOLS) has embraced systematic program evaluation, which includes a course quality instrument that is completed by participants immediately after course completion. This instrument includes self-reports of both Leadership and Outdoor Skills, in retrospective pretest/posttest formats, as measured by the NOLS Outcome Instrument (Sibthorp et al., 2005). These measures have demonstrated good internal consistency and evidence of validity over a number of related studies (Paisley et al., 2008; Sibthorp et al., 2007; 2008). For these data, internal consistency remained acceptable (Leadership 7-item $\alpha = .85$, pretest; Outdoor Skills 4-item $\alpha = .82$, pretest). For the 2009 summer field season, NOLS included a 5 item measure of trust (5-item $\alpha = .90$ for these data) which was adapted from Mayer and Gavin (2005) and previously used by Shooter (2008). All

scale items were rated on a seven point scale anchored by the descriptors “Strongly Disagree” and “Strongly Agree” to be consistent with the main survey.

Data were analysed using hierarchical regression to inform the research question that a student’s trust in their outdoor leaders would explain additional variance in the course outcomes of leadership and outdoor skill development, while controlling for pretest level of these skills. Participant’s age and sex were also entered into the model as covariates given their roles in previous models (e.g., Sibthorp et al., 2007). The initial regression models (one for each outcome variable) included both the covariates. The second/subsequent model added the trust variable.

Results: Data were collected from 1034 NOLS participants between June and August of 2009. This was strictly a convenience sample of NOLS courses that ran during the summer field season and represented a wide range of NOLS courses including adventure courses for youth, outdoor educator courses, and traditional wilderness courses. The majority of the courses were approximately 30 days in length. The course participants were 76 % male and averaged 21.5 years of age. Data were cleaned and screened and basic descriptive statistics were examined.

The first hierarchical regression model tested the relation between trust and leadership post course controlled for leadership pre course and participant sex. As expected, the first model was significant and both the pretest ($\beta = .71, p < .001$), age ($\beta = -.10, p < .001$; younger students learned more) and sex ($\beta = .06, p < .01$; females reported higher scores) explained a significant ($p < .001$) amount of the variance in the posttest. When trust ($\beta = .27, p < .001$) was added to the model, the explained variance in the post course leadership score increased significantly ($p < .001$) from adjusted $R^2 = .48$ to adjusted $R^2 = .55$. This indicates that the trust score predicts approximately 7% unique variance in the posttest leadership score.

The second hierarchical regression model tested the relation between trust and outdoor skills post course controlled for outdoor skills pre course and participant sex. As expected, the first model was significant, but only the pretest ($\beta = .19, p < .001$) explained a significant ($p < .001$) amount of the variance in the posttest. When trust ($\beta = .34, p < .001$) was added to the model, the explained variance in the post course outdoor skills score increased significantly ($p < .001$) from adjusted $R^2 = .03$ to adjusted $R^2 = .15$. This indicates that the trust score predicts approximately 12% unique variance in the posttest outdoor skills score.

Discussion: Although trust in a leader has predicted positive outcomes across organizational contexts (e.g., Mayer & Gavin, 2005; Rotter, 1967; Tan & Tan, 2000), and many of the outcomes assessed are highly relevant to outdoor leadership, the question of whether or not the same would hold true in a purely outdoor leadership context remained unanswered as there are differences between the type of leadership that occurs in management settings and the leadership of outdoor education settings. The present study relied upon a well established framework for studying trust in organizational contexts (e.g., Mayer et al., 1995) and found a positive relationship among the course outcomes of leadership development and outdoor skills development. Therefore, it is reasonable to suggest that trust in outdoor leaders may facilitate the attainment of course outcomes. The pretest, age, and sex covariates were related as expected based on theory and previous research (Paisley et al., 2008; Sibthorp et al., 2007).

This study highlights two important points for discussion. First, measuring trust in the NOLS instructor teams provided a description of the degree to which participants trust instructors. This was a beneficial addition to an established assessment tool and provided feedback regarding the effectiveness of one mechanism (the leader) that appears to be important within the outdoor education process. Second, measuring trust in the instructor teams allowed the researchers to explore the relationships among course outcomes and trust in the outdoor leaders. These two deliverables inform efforts toward instructor development by providing a straightforward way to assess leader trust within an outdoor program and by confirming the positive relationship among trust in outdoor leaders and participant outcomes.

Limitations of this study include the use of self reports, the idiosyncratic nature of NOLS courses, the use of a convenience sample, and the unaccounted for variance due to the nested structure inherent in these data. Future research might consider expanding the current framework used to explain trust

development by taking an inductive approach. Likewise, additional research is needed to explore the role of outdoor leader attributes and character in the outdoor education process and to explore concomitant ways that leaders might support the promotion of quality interpersonal relationships with participants.

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Contact:

Wynn Shooter, Sport and Outdoor Recreation, Monash University, Faculty of Education, McMahons Road, Frankston, VIC 3199, Australia. wynn.shooter@education.monash.edu.au;

Jim Sibthorp, Department of Parks, Recreation, and Tourism, University of Utah, 1901 E. South Campus Drive, Room 1085, Salt Lake City, UT 84112-9357, USA, Jim.sibthorp@health.utah.edu

John Gookin, National Outdoor Leadership School, 284 Lincoln St., Lander, WY 82520, USA. john_gookin@nols.edu

4-Year Longitudinal Participant Outcomes Associated with Outward Bound and National Outdoor Leadership School: A Means-End Investigation

Marni Goldenberg, Katherine Wassenberg, Jason Cummings & Dan Pronsolino
California Polytechnic State University

Background

Understanding participant outcomes allows program managers to effectively market program strengths, comprehend relationships between program attributes and participant outcomes, and program for specific outcomes. Outward Bound (OB) and the National Outdoor Leadership School (NOLS) are two of the largest outdoor education program providers, offering various courses to participants of all ages, both internationally and throughout the United States. This study seeks to examine longitudinal outcomes from OB and NOLS courses from the summer of 2006 that were 14 days or longer in Colorado and Wyoming.

Means-end theory was used to analyze the differences in outcomes from original and follow-up interviews occurring each year proceeding OB and NOLS 2006 course participation. Originally used to understand consumer decision-making, means-end theory has recently served as a useful tool in the recreation and outdoor education field. Gutman's (1982) means-end theory has application to outdoor recreation through such studies as understanding the outcomes associated with ropes course programming (Goldenberg, Klenosky, O'Leary, & Templin 2000; Haras, Bunting, & Witt, 2006) and examining the components of an outdoor experience (Goldenberg, McAvoy, & Klenosky, 2005; McAvoy, Holman, Goldenberg, & Klenosky, 2006).

Methods

By linking physical objects or services (the means) with the values of an individual (the ends), means-end theory examines three levels of abstraction: attributes, consequences, and values. Attributes are an individual's experiences (the means), such as climbing, cooking, or hiking. Consequences are the direct results of an attribute, such as having fun, interacting with others, or fear/anxiety. Values are the individual's desired end-state, such as gaining self-respect/esteem/confidence, developing warm relationships with others, or having a sense of accomplishment.

In 2006, semi-structured, in-person interview were used with a convenience sample of OB and NOLS participants after course completion. In 2007, 2008, and 2009, semi-structured telephone interviews were used with a convenience sample of 2006 interview participants. Each year, subjects were asked to identify meaningful components of their course (attributes) and to ladder from their response through a series of questions. Once participants identified an attribute from their course, they would be asked why that attribute was important. After responding, they were asked again "...and why is that important?" until they eventually stated a value.

For each data set, ladders were coded with content codes and entered into the LadderMap (Gengler & Reynolds, 1995) computer program. The content codes were analyzed by an independent coder to determine intercoder reliability. The researcher and a second independent coder reviewed coding discrepancies and determined final content codes. Implication matrixes were created to assess the number of times concepts were linked together. From the implication matrixes, hierarchical value maps (HVMs) were created as visual representations of the themes.

Results

Original data were collected from 510 subjects, 158 were OB students and 352 were NOLS students, with 337 males and 173 females. First year follow-up data were collected from 184 subjects, 82 from OB and 102 from NOLS, with 118 males and 66 females. Second year data were collected from 197 subjects, 89 from OB and 108 from NOLS, with 127 males and 68 females. Third year data were collected from 201 subjects, 80 from OB and 121 from NOLS, with 133 males and 67 females.

“Expeditioning,” “group,” and “climbing” were the most commonly mentioned attributes in 2006. “Group” and “expeditioning” were the top two attributes in 2007, 2008, and 2009. The third most frequently mentioned attribute was “overall course” in 2007 and 2008, and “instruction” in 2009.

As attributes lead to consequences, “group” led to “new experience/opportunity” during 2006 and 2009, and “being challenged” in 2007 and 2008. “Expeditioning” led to “new experience/opportunity” and “environmental appreciation” during 2006 and 2007 analysis, although 2007 also resulted in a third connection with “new experiences/opportunity.” Analysis in 2008 found that “expeditioning” led to “being challenged,” while 2009 analysis led to “new experience/opportunity,” “fear/anxiety,” and “being challenged.” “Overall course” led to “being challenged” during both 2007 and 2008; additionally, it led to “new experience/opportunity” in 2007 and to “hard skill development” in 2008. “Instruction” led to “leadership” in 2009.

The values of “transference,” “sense of accomplishment,” and “self-respect/esteem/confidence” were the top three values stated during all four years.

Difference in attributes and values occurred by gender. For all data sets, both genders stated “expeditioning” and “group” as two of the most frequently mentioned attributes. In 2006, “climbing” was the third top attribute for both genders. During 2007 and 2008 interviews, “overall course” was the third attribute. In 2007, females also mentioned “solo.” In 2008, males also mentioned “wilderness.” During 2009 interviews, the third attribute was “wilderness” for males and “instruction” for females.

For males, “transference,” “sense of accomplishment,” and “self-respect/esteem/ confidence” were the top three values stated during all four years. While “self-respect/esteem/ confidence” was a top value for females during all years, females had greater variability across the data sets, also stating “sense of accomplishment,” “transference,” “warm relationships with others,” and “self-awareness” as top values.

Discussion

Participants from OB and NOLS cited many of the same program attributes as their most meaningful experiences despite differences in program structures and course contents. Numerous studies indicate that outdoor adventure programs have major, lasting, and positive impacts on participants, others, and the environment (Dickson, Gray, & Mann, 2008; Hattie, Marsh, Neill, & Richards, 1997; Neill 2008). Results of this study show how OB and NOLS programs continue to increase participant self-respect/esteem/confidence, provide a sense of accomplishment, and impart transferable lessons and skills three years after course participation.

Several studies indicate that outcomes, personal meanings, and motivations differ for male and female outdoor adventure participants (Dingle & Kiewa, 2006; Estes & Ewert, 1988; Kiewa, Brown, & Hibbins, 2001; Russell, 2002). These study results indicate that male and female subjects do perceive different attributes, links to consequences, and values. It is important that practitioners consider these differences and understand how outcome maintenance varies by gender during program formation.

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Contact: Marni Goldenberg, Ph.D., Associate Professor, Recreation, Parks, and Tourism Administration Department, California Polytechnic State University San Luis Obispo, CA 93407, (805) 756-7627, FAX (805) 756-7508, mgoldenb@calpoly.edu

Comparison of Appalachian Trail and Pacific Crest Trail Hikers: Motivations and Benefits

Eddie Hill, SUNY Cortland, Marni Goldenberg, California Polytechnic State University, Edwin Gómez, Old Dominion University, Stephanie Fellows, California Polytechnic State University, Barbara Freidt, Old Dominion University & Laura Hill, SUNY Cortland

Background

The Pacific Crest Trail (PCT), and the Appalachian Trail (AT) are two of eight designated National Scenic Trails. The PCT and the AT were the first of these eight scenic trails named in the National Trails System Act of 1968. Recently, trails, greenways, and paths have been used to promote healthy lifestyles (e.g., Hill, Swain, & Hill, 2008). Lack of exercise has been linked to poor health issues (e.g., obesity) in American society. The PCT and AT are potential examples of resources for championing physical activity. An understanding of the motivations and benefits perceived to be associated with physical and outdoor activities is needed in order to empirically illustrate the challenges faced by individuals choosing sedentary lifestyles, in order to promote more active ones. A better understanding of the motivations and benefits associated with hiking may encourage new and current users to explore trails.

The current study has three foci. First, through the use of the means-end theory approach, this study seeks to examine the motivations for hiking the PCT. This component of the study focuses on providing support for the attributes of the footpath, and whether these attributes are correlated with perceived consequences and desired outcomes by the PCT hikers. Second, this study seeks to explore and provide support for varying types of benefits, based on Driver, perceived to be gained by hiking on the PCT. Once this data is collected, the third focus of this study is to compare the motivations and benefits from hikers of the PCT and the AT.

Methods

Information was gathered via the use of an internet questionnaire sent to AT and PCT hikers. The previous AT data confirmed and validated the Benefits of Hiking Scale (BHS). The BHS was created based on Attributes, Consequences, and Values from previous research (Hill et al., 2009). The current study also uses the typologies of recreation benefits identified by Driver (1997). Driver categorized three dimensions of recreation benefits: the improved condition (IMP), prevention of a worse condition (PREV), and realization of a psychological state (PSYC). The BHS was developed to measure each typology of benefit, in the context of hiking. Independent sample t-tests were used to compare and contrast hikers of the PCT and AT.

Results

From the AT study, a total of 454 usable surveys were collected. Due to the development of a new scale (i.e., BHS), internal and external validity were performed. Confirmatory factor analyses were conducted to determine if the variables within the BENE and Means-end constructs were valid measures. Sampling adequacy was confirmed using a Kaiser-Meyer-Olkin (KMO) of >0.60 and a Bartlett's Test of Sphericity (BTS) of $p < 0.05$ on the six subscales: ATTRIB, CONSEQ and OUTC as well as IMP, PREV, and PSYC; the subscales met both the KMO and BTS criteria. The subscales for the AT passed internal validity and reliability tests. Because internal validity was confirmed, the subscales (ATTRIB, CONSEQ and OUTC) and (IMP, PREV and PSYC) were analyzed to confirm whether or not each were a dimension of Means-end and BENE, thus, confirming external validity. The Means-end (KMO of 0.87 and BTS $p < 0.01$) and the BENE (KMO 0.902; BTS $p < 0.001$) constructs both held. Any scale items

not meeting the 0.60 criterion were omitted from the second factor analysis. The Means-end and BENE subscales passed all validity and reliability tests.

From the PCT study, 312 usable surveys were collected. Of particular interest to us in this study was to compare the findings from the AT study to the PCT study. In particular, we sought to look at (a) whether or not the subscales held for the PCT study, utilizing the same items from the AT study, and (b) whether or not there were any significant differences between the AT and PCT study subscales. All scales in the PCT met the KMO and BTS criteria established for the AT study. Additionally, all items measuring the subscale were well beyond the cutoff of 0.60. The following table illustrates a side-by-side comparison of the AT and the PCT subscales and their respective reliabilities:

<u>Subscales</u>	AT <u>α – Reliability</u>	PCT <u>α – Reliability</u>
Prevention of a worse condition	.91	.90
Improved Condition	.90	.90
Realization of a Psychological State	.90	.88
Attributes	.75	.83
Consequences	.77	.81
Outcomes	.91	.90

The above scale demonstrates that the Chronbach’s alpha reliability coefficients for the AT and PCT subscales are very comparable. The next step was to ascertain whether or not there were differences between these subscales and users of both the AT and the PCT. An independent samples t-test was used to test the statistical significance in mean differences between AT and PCT recreational users and motivations and benefits. There was a significant difference between AT and PCT users and the following:

- AT users demonstrated a **higher** likelihood toward a prevention of a worse condition ($M=5.46, SD=1.44$) than did PCT users ($M=5.28, SD=1.56$), $t(747)=3.35, p=0.001$;
- AT users demonstrated a **lower** likelihood toward attributes ($M=6.34, SD=0.72$) than did PCT users ($M=6.46, SD=0.79$), $t(733)=-2.12, p=0.04$;
- AT users demonstrated a **higher** likelihood toward consequences ($M=5.35, SD=1.08$) than did PCT users ($M=4.96, SD=1.33$), $t(734)=4.51, p=0.0001$; and
- AT users demonstrated a **higher** likelihood toward outcomes ($M=5.99, SD=1.03$) than did PCT users ($M=5.71, SD=1.21$), $t(723)=3.35, p=0.001$.

There were no significant differences between AT and PCT users and their likelihood toward using the trails for the purposes of an improved condition, nor for the purpose of realizing a psychological state.

Discussion

From a psychometric perspective, the subscales reflecting both motivations and benefits provide support for the underlying concepts mentioned in the benefits literature and the means-end literature and would warrant future usage of these items and the BHS. The AT and PCT data support hiking is perceived to be beneficial by users. Motivations and benefits were similar

among the AT and PCT hikers, providing a national view on the motives and benefits of hiking. However, the significant difference between AT and PCT users (e.g., outcomes) does beg the question of “why.” Does the AT “culture” offer a different level of outcome or value? These types of questions should be further explored. Nonetheless, hikers of these trails could use this information to encourage others to hike. Hiking group leaders could use the information in the programming and promotion of trips. Trail maintaining clubs may use the data to acquire new funding for footpath conservation and preservation. Evidence-based research can assist in deciding how best to allocate funding in a manner supporting conservation and preservation while also supporting the provision of benefits desired by users. Benefits similar to those attained while hiking on our national scenic trails may be gained from hiking other trails such as local greenways and footpaths.

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Contact: Eddie Hill, SUNY Cortland, Recreation, Parks & Leisure Studies Department, P.O. Box 2000, Cortland, NY 13045, (607)-753-2448, eddie.hill@cortland.edu

Morale Through the Mouth: An Exploratory Study

Whitney Ward, Southern Illinois University Carbondale

Background

It has often been stated that fire was key in the evolution and development of *Homo sapiens*. However some (National Public Radio, 2009) argue that for several reasons cooking, and not fire, was what was fundamental to the identity and development of humans. Although this may or may not be the case, cooking has come to play an important role in the lives of humans today. So much so, cooking is used as a tool by both corporate and not for profit organizations to achieve several different outcomes such as developing a sense of community (Hymowitz, 2002), improving morale (Hymowitz; Pulley, 1997; Spotts, 1999), teambuilding (Ludwig, 2003; Wiebe, 2004), and leadership development (Wiebe). “Meal sharing is the most intimate activity possible in corporate relationships. ... It is the most efficacious way of initiating and maintaining these bonds.” (Wiebe, p. 15)

Cooking and meal sharing are an even more integrated aspect of the outdoor experience. Consequently, when a group is hungry, tired, and cold even the simplest decisions or camp chores can cause a group to break down (Harvey, 1999). Therefore the time spent planning, preparing, and consuming meals amounts to a significant portion of the outdoor experience. However there is limited research on the impact that cooking and meal times have on participants and the overall outdoor experience – namely improving group morale. The research that has been done has often focused more on the fears associated with a lack of food (Ewert, 1988; 1989; Ward & Hobbs, 2006). Due to the amount of time and effort that is associated with outdoor trips, and with such a limited amount of research (most of it rhetorical), this study will focus on the impact that cooking and meal time have on group morale of outdoor courses.

Methods

Mixed qualitative methods were employed to help understand what influence meal time and cooking had on outdoor courses - specifically on group morale. Study participants were enrolled in college outdoor skills courses. A total of 27 participants and four instructors, split over separate weekends, were observed during portions of two backpacking trips. Basic observations were made in regards to general overall morale of the group during a portion of each trip. However a thick observation took place during the evening meal on first night of each trip. Levels of both group and individual morale and the influence of food were observed. The thick observation was conducted with two different four-person cook groups. The level of functioning of the group was observed during both occasions.

Data triangulation was achieved through the additional analysis of reflective papers. Following the field component of 12 outdoor skills courses, participants were required to write a two to three page reflective paper about their experience as a portion of their grade. The reflection encompasses what they learned about themselves and how they can relate participation in the course to their life. These papers represented a rich source of data, which was not being utilized. Therefore, 92 reflective papers, from the 12 different outdoor adventure skills courses offered were analyzed (including the two backpacking courses).

Data analysis consisted of reading each paper and thick observation transcription multiple times. Then following established qualitative techniques, statements were categorized (Miles & Huberman, 1994). Categories were then coded into themes. Statements that expressed a single idea were used as the basic unit of analysis. Measures were taken to ensure data trustworthiness.

Critical colleagues were utilized to assist in validation and accuracy of data analysis. Thick descriptions, complete with direct transcript quotations, and supporting reflective paper quotations will be presented in the final reporting of the results of this study.

Results

As is the case with all qualitative methods, it is difficult to generalize the results from this study to other groups and situations. However, a multifaceted understanding of what is learned about the impact food and meal time has on a group's morale, will increase the transferability of these results. Although the reflective papers had several themes emerge (many that are not relevant to this study), food related themes did emerge and supported the findings of the two field observations. A primary theme is of the overall importance of food on an outdoor trip (both in quantity and quality) as was shown by the quote from one of the participants:

I also enjoyed learning how to cook on the stoves. I had always just watched people cook on them but never enjoyed it myself. It was so wonderful to cook pasta and yummy pizza out there. If only we would have actually had enough food for everyone instead of hors d'oeuvres there would have been no problems. (Backpacking Participant)

It can also be said that meal times facilitate opportunities for group bonding and several themes representing group bonding were emerged from the data such as teamwork, discovery/exploring and establishing roles and group norms. Although mealtime had several positive themes associated with it, there were also themes of frustration and anxiety. The essential importance of food was illustrated by one backpacking participant, "I was so hungry by lunch time that I gobbled down my PB&J bagel sandwich...it was delicious!" However, the laughter, humor, and improved mood at meal times were dominate themes that emerged from the thick observations. The observations of each cook group were characterized by laughing, joking, and overall joviality.

Discussion

The antidotal evidence of the importance of food and meal time in the literature is prolific; however there is very little empirical evidence that has addressed the impact meal time has on group morale in an outdoor environment. Statements regarding food in a backcountry setting, such as the following, abound in outdoor literature: *In the backcountry, food becomes a favorite topic of conversation, and having it prepared well in appropriate quantities, at suitable times brings everyone on the trip great joy. Thus food and cooking provide one of the greatest participant leadership opportunities around.* (Lodato, 2007, p. 154). The findings from this study begin to provide support of the importance of meal time on group development beyond the antidotal.

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Contact: Whitney Ward, Southern Illinois University Carbondale, wward@siu.edu

An Outcomes-Based Evaluation of Resident Environmental Education in Central Pennsylvania

Rob Andrejewski & Andrew J. Mowen, The Pennsylvania State University

Background

The practice of conducting environmental education (EE) evaluation has been said to be in a “relatively immature state” (Fien, Scott, & Tilbury, 2001, p.380). EE evaluations tend to center on participant satisfaction and staff performance, rather than concentrating on how well program objectives match program outcomes (Chenery & Hammerman, 1985). Calls for more stringent evaluation research in EE recommend a focus on participant outcomes, especially in the areas of student achievement and social development (Marcinkowski, 2004; National Environmental Education Training Foundation, 2000).

One area that has heeded the call for more rigorous, outcomes-based evaluation is resident EE (Smith-Sebasto, 2007). Resident EE grew out of the school camping movement of the 1930s (Hammerman, 1980) and is defined as an EE program that requires participants to stay on-site for at least one night (Dettmann-Easler & Pease, 1999). Resident EE is characterized by experiential, inquiry-based activities that immerse students in the natural world, promote positive social interactions, and assist in the development of ecological and environmental literacy (Dettmann-Easler & Pease, 1999; Dresner & Gill, 1994). Recent efforts by the American Camping Association (ACA) in the area of residential camping evaluation have resulted in instruments well-suited to measuring changes in target outcomes associated with resident EE, including increased pro-social behavior skills and development of an affinity for nature scale.

This purpose of this paper is to describe outcomes of a summative evaluation of Shaver’s Creek Outdoor School, a resident EE program in central Pennsylvania. Outdoor School is designed to help participants develop positive relationships with other people and nature “by offering activities that promote a healthy self-image, provide clear understandings of the earth’s natural systems, and foster an emotional bond to the natural world” (Shaver’s Creek Environmental Center, 2007). The tears of students as they hug their counselors good-bye and board the bus back to school symbolize the emotional impact of this weeklong resident EE program; however, empirical data is needed to assess its effectiveness programmatic goals. This evaluation builds upon the work of the ACA (2007) by measuring outcomes of Outdoor School participants on four domains of interest to program coordinators and participating school administrators: level of independence, teamwork, affinity with nature, and ecological knowledge. These target outcomes also align with the stated goals of the program.

Methods

Participants in the study were fifth grade students from six central Pennsylvania schools who attended Outdoor School in the spring of 2009 (n=227). The domains of independence (six items) and teamwork (eight items) were adapted from the Camper Outcomes Survey (ACA 2007; Ellis & Sibthorp, 2006). The domain of affinity for nature was adapted from the ten-item Nature Affiliation Scale (Sibthorp, 2008), a new outcome measure from the ACA. Ecological knowledge was assessed using seven test questions released by the Pennsylvania Department of Education and the California Department of Education.

Previous studies using these scales have used a cross-sectional design employing an innovative status-plus-change format to measure participant change in a recreational context (ACA, 2007). In contrast, this resident EE evaluation used a longitudinal design with three

waves of data collection in a primarily educational setting. Participants took the survey in their home schools once during the week preceding Outdoor School participation, again one week after participation, and a third time approximately six weeks after participation. The timing of survey administrations was selected to evaluate immediate impacts (from pretest to post-test) and short-term outcomes (pretest to follow-up/post-test to follow-up) of Outdoor School on each of the study domains. All surveys were read aloud to the participants to ensure item clarification. Data collection for this study took place from April to June of 2009. Differences in student outcomes from each wave of data collection were examined for statistical significance using repeated measures analysis of variance for each domain.

Results

One-way within-subjects repeated measures ANOVAs were conducted on each domain of interest with time of data collection as the independent variable. The means and standard deviations for Independence, Teamwork, Nature Affinity, and Ecological Knowledge are presented in Table 1. The results for the ANOVA on Independence (Wilk's $\eta^2 = .77$, $F(2, 225) = 34.13$, $p < .001$, partial $\eta^2 = .23$), Teamwork (Wilk's $\eta^2 = .72$, $F(2, 225) = 43.82$, $p < .001$, partial $\eta^2 = .28$), Nature Affinity (Wilk's $\eta^2 = .75$, $F(2, 225) = 37.59$, $p < .001$, partial $\eta^2 = .25$), and Ecological Knowledge (Wilk's $\eta^2 = .92$, $F(2, 225) = 10.51$, $p < .001$, partial $\eta^2 = .09$) indicated a significant time effect.

Table 1
Means and Standard Deviations for Independence, Teamwork, Nature Affinity, and Ecological Knowledge

Domain	Time	<i>M</i>	<i>SD</i>
Independence	Pre-test	3.77 _a	.65
	Post-test	3.96 _b	.62
	Follow-up	4.07 _c	.60
Teamwork	Pre-test	4.02 _a	.45
	Post-test	4.22 _b	.45
	Follow-up	4.24 _b	.47
Nature Affinity	Pre-test	4.34 _a	.46
	Post-test	4.55 _b	.43
	Follow-up	4.53 _b	.44
Ecological Knowledge	Pre-test	4.20 _a	1.38
	Post-test	4.44 _b	1.40
	Follow-up	4.62 _b	1.46

Note: Scale means with no subscript in common differ at $p < .05$ using Holm's sequential Bonferroni post hoc comparisons.

Post-hoc analyses were conducted using pairwise comparisons controlling for Type I error using the Holm's sequential Bonferroni procedure, as reported in Table 1. Significant positive increases were found in each of the outcomes from pre-test to post-test. Pairwise comparisons from post-test to follow-up for Teamwork, Nature Affinity, and Ecological Knowledge were not significant, indicating that scores neither increased nor decreased at the six

weeks follow-up. However, a significant difference was found between post-test and follow-up for Independence, indicating a possible test effect.

Discussion

This evaluation ties the objectives of a resident EE program to participant outcomes, giving the program's stakeholders—including staff, school teachers, principals, and parents—a measure of how well the program may be meeting its goals beyond participant satisfaction and staff performance. Participant scores increased on levels of independence, teamwork, nature affinity, and ecological knowledge indicating the effectiveness of the program in reaching these goals; however, we must stop short of stating that these increases are solely based on the Outdoor School experience. The lack of a random sample or a control group prevents generalization beyond the current study sample. Future evaluations could build upon the findings by employing an experimental design to increase generalizability and by incorporating additional performance metrics to measure environmental attitudes and behaviors.

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Contact: Rob Andrejewski: rgal116@psu.edu or Andrew Mowen: ajm194@psu.edu

Fields of Grain, Concrete Jungles: Environmental Socialization and its impact in science teacher program interests

J. Joy James, Lisa Gross & Eric Frauman, Appalachian State University

Background

From the home, to the school, and across local meeting places, individuals shape and are shaped by the surroundings in which they interact. Research on environmental socialization into conservation and outdoor recreation indicates that many outdoor activities and comfort in nature settings are learned during childhood (O'Leary, Behrens-Tepper, McGuire, & Dottavio, 1987; Scott & Willits, 1989). Participation in these outdoor recreational activities encompasses a basic knowledge of natural science and can cultivate an interest in the natural world. This accumulation of childhood experiences in nature can lead to a body of knowledge and appreciation of the environment (Bixler et al., 1994). Additionally, early childhood education research supports the idea that outdoor experiences are important to children's development and interest in outdoor activity (Rivkin, 1995; Moore & Wong, 1997). Bixler and Morris (2000) define environmental socialization as:

Minimally 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).

For the teaching professional, personal experience is intertwined with their experiences as students. Developed both in and out of school, an individual's experiences with acquiring subject knowledge can be supported or resisted, emphasized or ignored. Specifically, we are interested in how environmental socialization factors (i.e., prior experience, background and culture) influences an individual's future actions. For the purpose of this paper, we focus on public school teachers and seek to understand relationships between their engagement in early experiences in a given setting (rural, suburban/urban) and their interest in field-based related topics and programs.

Methods

Students enrolled in an undergraduate level recreation assessment course, two representatives from environmental education facility, and three faculty members representing two college departments (education and recreation) developed the initial survey instrument. Surveys were distributed through the college listserv to all undergraduate program student teachers in the undergraduate program and their cooperating teachers during the spring of 2008. Statistical analyses (cross tab & t-tests) were conducted based on the differences between growing up in a suburban/urban or rural environment and teaching content preferences.

Results

Of the total sample there were 88 usable surveys for our purposes with 49 participants identified as having grown up in a rural area (R) and the remaining participants (n=39) growing up in an suburban or urban area (S/U). We found that teachers who grew up in rural areas were slightly less interested than suburban/urban teachers in field-based learning and expressed less experience with environmental education. This did not fit with our initial expectations that rural teachers would be more likely to participate and express interest in field based opportunities. We would expect that rural teachers, given the environment they were brought up in, would express

more interest in field based opportunities. Also, we wondered if the use of the term of environmental education has different connotations for teachers growing up in rural environments. While not examined this might also explain the findings. On the other hand each teacher group had none to little experience with environmental education. This supports the findings of previous research studies conducted on teacher preparation and efficacy toward environmental education (Powers, 2004; Mastrilli, 2005; Mosely & Utley, 2008).

We found the teacher's interest in program topics were not significantly different for rural and suburban/urban teachers. Our thought was that rural teachers would express greater interest than S/U teachers on the majority of the topics. But in fact the opposite occurred with S/U teachers expressing greater interest in 6 out of 10 the science related topics, although few topics generated more than 40% interest by either teaching group.

When looking at the environmental socialization experiences of rural teachers, the analysis indicated that there were many statistically significant differences between those who expressed interest in a topic versus those who did not. Each of the six environmental socialization measures revealed one or more mean differences. Rural teachers who expressed an interest in forest ecology, for example, had greater mean scores for four environmental socialization measures (water-based, played in nature, camp/group scouts, and parks/travel) than those who expressed no interest in forest ecology. Whereas for S/U teachers who expressed an interest in teaching forest ecology only one significant difference was found (higher mean score in played in nature).

Across a number of topics there were commonalities with both rural and S/U teachers. As would be expected those teachers with more environmental socialization experiences tend to be more interested in science-based topics. Teachers who expressed interest in topics tended to have greater environmental socialization experiences.

Discussion

Results from this study shed light on the importance of childhood experiences in natural environments in teacher choices for curriculum and interest in field based learning. As described in previous studies (Tanner, 1980; Peterson, 1982; Chawla, 1988; Chawla & Hart, 1988; Bixler, Carlisle, Hammitt, & Floyd, 1994, James & Bixler, In press), early environmental experiences that support nature-based interests can lead to career/vocation choices, whether it be the committed conservationists (Tanner, 1980; Chawla, 1988), kayakers (Bixler & Morris, 2000), naturalists (James & Bixler, in press) or for the purposes of this study science teachers! Investigating preservice teachers' past environmental socialization experiences and surrounding environments could offer insight into why they do or do not prefer to teach science-related concepts. A teacher with urban/suburban childhood environment tends to express more interest in topics that were characteristic of a teacher's experience from a rural childhood environment. Whereas the teacher, with a rural childhood was less interested in field-based learning due to a familiarity with the topics because of earlier ES experiences afforded by the rural environment.

Thus implying, teacher preparation programs should not only consider the preservice teacher's childhood ES experiences and surrounding environment but determine ways to incorporate ES competencies into curriculum (i.e., tolerance for weather extremes, wayfinding in unstructured environments, travel planning skills, management of outdoor classroom and activity-related ancillary skills). Fostering these ES competencies might encourage comfort in teaching science content both in and out of the classroom as well as field-base learning or environmental education.

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Contact:

J. Joy James, Recreation Management, HLES, Appalachian State University, Box 32071, Boone, NC 28608, 828-262-6322

Lisa Gross, Curriculum & Instruction, Appalachian State University, Duncan Hall, Boone, NC 28608, 828-262-2224

Eric Frauman, Recreation Management, HLES, Appalachian State University, Box 32071 Boone, NC 28608, 828-262-6317

The Unstructured Outdoors vs. Environmental Education: What Influences Individuals to Preserve Land?

James Farmer, Marshall University, Charles Chancellor & Burnell Fischer, Indiana University

Background

Comprehending the underlying factors that contribute to pro-environmental behavior has again emerged as the quintessential research question for many in academia. Scholars, particularly those within the field of environmental education (EE), have once again found themselves at the forefront of political agendas, with potential funding opportunities and with the support that may actually integrate EE within the public school curriculum (NAAEE, 2009). However, after four decades, questions still arise as to the affect of EE, as well as to what actually contributes to pro-environmental behavior.

One explanation of pro-environmental behavior is Thomas Tanner's (1980) Significant Life Experience (SLE) model. Tanner (1980) suggested that pro-environmental behavior and activism were found to be prompted by SLEs based in or about the outdoors, particularly while individuals were in their childhood, teenage, or early adult years. Several studies have emerged following Tanner's early position that supports the notion of SLEs (Palmer, 1993; Peterson & Hungerford, 1981; Sward, 1999).

A host of scholars have suggested that EE, free play outdoors, historic events, summer camp experiences, and witnessing a negative environmental experience all support later life environmental activism and pro-environmental behavior (Chawla, 1998; Corcoran, 1999; Palmer and Suggate, 1996; Peterson, 1982, and Tanner, 1980). Specifically, Ewert, Place, and Sibthorp (2005) detected five key variables that emerged throughout the SLE literature, which include: 1) direct experiences in nature, either alone or with family and friends, 2) formal education, 3) media, 4) bearing witness to negative environmental events, and 5) participation in formally organized outdoor experiences.

Consequently, few, if any studies have sought to comprehend the intricacies of SLEs among individuals engaged in a pro-environmental behavior who were not selected based on the individuals' being "environmental activists". Rather, most, as Tanner (1998) posits, have selected subjects who were informed and responsible environmental activists, as opposed to common individuals performing pro-environmental behaviors. The current study sought to comprehend the perceived influence of SLEs on the development of one's pro-environmental behavior among individuals performing pro-environmental behaviors within the state of Indiana, individuals preserving land via a permanent deed restriction (conservation easement).

Methods

The researchers utilized a mixed methods sequentially embedded research design in order to develop an understanding of the impact of varying SLEs as positioned within the literature and found throughout the ensuing study. The rationale for using the current design allowed the researchers to use one method to inform the construction and implementation of the proceeding (Creswell and Clark 2007), while offsetting the limitations of one method with another (Johnson and Onwuegbuzie 2004). Phase 1, which was presented at the 2008 CEO, included informal in depth interviews that were evaluated using a phenomenological analysis (Creswell, 2007; Moustakas, 1994). Phase 2 included a mailed questionnaire to solicit data from a larger, more comprehensive population.

Phase 1 participants were purposely selected based on geographic locale and land use type. Three analysis steps were included in Phase 1, which included the following: 1) open coding initial concepts, terms, and phrases into distinct categories, 2) axially coding the clusters

of data for emergent themes, and 3) crosschecking the phrases, categories, and themes for consistency of interpretation (Creswell, 2007). Based on the outcomes of Phase 1 an eight page questionnaire was developed for the data collection within Phase 2. The researchers used Salant and Dillman's (1994) four-step mailed survey format to gather data from an attempted census population among individuals who had donated / sold conservation easements (CE) to local land trust agencies throughout Indiana. Data was processed into Microsoft Excel, and later analyzed using SPSS 17. A Wilcoxon Ranked Tests for non-parametric data and general descriptive processes were used to analyze the data.

Results

Phase 1 included participants aged 28 to 94 years of age, all of whom were Caucasian, with 10 males and 10 females. All participants in the study had donated their CE. Twelve of the 20 interview participants were found to be non-extractive land users, with the remaining eight engaged in farming practices on the land preserved. Two main themes emerged within Phase 1 that contributed to the construction of the Phase 2 questionnaire; unstructured experiences in the outdoors and interactions with adult(s) appeared to make considerable contributions to later life pro-environmental behavior.

Eighty-four landowners (of the estimated 120 landowners who had donated / sold CEs to local land trusts by spring, 2008) were able to be contacted four times with mailings in Phase 2 (Salant and Dillman 1994). Sixty-four landowners provided completed questionnaires for a 76% response rate of those mailed and a 53% in considering a census count. Phase 2 participants consisted of both male (54.7%) and female (45.3%) participants, with nearly all but one identifying her / himself as Caucasian. Most participants were over the age of 51 (90.5%), had at minimum a bachelor's degree (74.9%), were not economically dependent on the property (72%), and had a household income in 2006 above \$60,000 (83%). Participants were asked to consider a list of 21 potential SLEs and score each based on a Likert Style framework (0=N/A, 1= no impact, 2=low impact, 3= medium impact, 4=high impact). Overall, individual experiences in nature (3.66) emerged as the strongest significant life experience, followed by free play outdoors (3.34), planned outdoor activities (2.69), parents (2.60), and grandparents (2.51). The researchers tested the level of difference between the SLE variables by means of a Wilcoxon Ranked Test. Top "ranked individual experiences in nature" tested significantly different from the second ranked "free play outdoors" (0.014), while "free play outdoors" tested significantly different from the third ranked "planned outdoor activities" (0.001), "planned outdoor activities" did not test significantly different from "parents" (0.424), "parents" did not test significantly different from "grandparents" (0.649), and the fifth ranked "grandparents / older relatives" versus the 11th ranked (3 tied for 11th rank) "EE experience" variable tested significantly different at the 0.001 level.

Discussion

The findings of this study support similar notions found throughout the SLE literature, that individual experiences in nature and free play outdoors are significant contributors to fostering pro-environmental behavior among many individuals (Chawla, 1998, Palmer and Suggate, 1996), however, it is only by considering the overall essence of these findings within the larger scope of Sense of Place theory (Worster and Abrams, 2005) that the phenomenon can be understood. What individual experiences in nature and free play outdoors provide is the fundamental socialization of the individual with nature (Bixler and James, 2005) that supports an "ecology of the heart" ideal (Schroeder, 1996 in Ewert, 1996). Though Sense of Place has been supported for over a decade in order to understand the development of pro-environmental

attitude and behavior (Sanger, 1997), its significance remains sparse and its implementation ineffective. Therefore, this research supports three salient ideas for further consideration and testing. First, individual experiences in nature, and likely those that are free in structure, are paramount to fostering pro-environmental behavior among individuals similar to those found in this study. Secondly, attention is needed for research and that considers the impact of Sense of Place on environmental attitude and behavior, research that focuses on both unstructured and structured experiences in and about nature. Finally, research and potentially programming may want to consider and embody Sense of Place as means for promoting pro-environmental behavior.

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Factors Leading to Outdoor Orientation Program Outcomes: A qualitative exploration of quantitative survey results.

Brent J. Bell, Ph.D., University of New Hampshire.

Abstract

This study expands upon a previous experiment comparing college students' learning in a First Year Experience course (FYE) measured via the First Year Initiative survey (FYI). The experimental group participated in an FYE course curriculum delivered during a multi-day adventure program and demonstrated greater gains than the comparison group who received the same core curriculum in a traditional once-a-week meeting in a college classroom. This study collected follow-up essays from 241 participants in the FYE adventure class and conducted a content analysis on the factors with the largest effect sizes from the FYI (*Improved connections with peers* and *Improved knowledge of wellness*). The method was based upon Creswell's sequential explanatory design (2009). The participants on the adventure program reported deep engagement with the curricular features of the FYE class because of trust. Trust between the students led to more in-depth and personal discussions about the curricular topics.

Introduction

The FYE course conceived in the 1970's is now taught in some form at 78% of the colleges in the United States (Gordon, 1989, Swing 2002). The research on FYE courses demonstrates positive outcomes such as increasing retention, reducing stress, and increasing academic performance (Fidler, 1986; Fidler & Hunter, 1989). To help compare curricular effectiveness between different course models, Swing (2002) developed the FYI instrument, a 15-factor survey used by over 40,000 FYE course participants. In 2006 and 2007, groups of students were randomly selected into two different FYE curricular conditions (a time intensive adventure program or a 10-week classroom experience) with each courses impact upon student learning measured by the FYI survey. The results demonstrated that the adventure group scored significantly ahead of the more traditional classes on eight of the fifteen factors ($p < .05$). Two of the factors, *Improved connections with peers* ($\eta = .096$) and *Improved knowledge of wellness* ($\eta = .083$), had large effect sizes. This study used the quantitative results to guide this study: a qualitative exploration of student essays to more deeply understand potential mediating variables that influenced the different scores.

Methods

The data in this study was acquired from a content analysis of the adventure students' final essays for the FYE class. Students were asked to reflect on and evaluate the class in a four to seven page paper responding to a common essay prompt: "The [final paper] should be a reflection of your [adventure] experiences with an analysis of how/if at all, the [adventure] program was effective in helping you adjust to [college] and college life. It is important to be specific in describing aspects of the program important to you, as well as aspects of the experience that did not help or hindered your adjustment. (Adventure program syllabus)."

Participants

Participants in the essay condition completed the adventure program and submitted a final essay. A total of 237 complete data sets were collected ($N = 450$). The essays were entered into a qualitative analysis software program (NVivo) for coding.

Coding procedures

Two researchers used a content analysis method (Weber, 1990) to independently code essays for the two largest effects from the survey results: *Improved connections with peers* and *Improved knowledge of wellness*. Coding was limited to these two variables in this study.

The theme *Improved connections with peers* was coded by descriptions of peer relationships, such as “I met wonderful people and gained friends” (Essay #1082) or “The lake...gave us a chance to bond” (Essay #1018). These related to the conception of peer relationships in the FYI instrument, which asked questions such as “this class improved efforts to get to know students in my class” (Question 9), “this class improved my ability to meet people with common interests” (Question 10), and “this class improved my ability to establish close friendships with peers” (Question 11).

Similarly, the theme *Improved knowledge of wellness* was coded by words or phrases pertaining to the FYI’s conception of wellness (i.e., understanding the impact of alcohol consumption, drug use, regular exercise, etc.” This factor asked questions such as “This course improved my understanding of the impact of alcohol consumption” (Question 34). Examples of student comments include “the leaders did a good job of giving us insight on how to stay on track and how to have fun in college in other ways than drinking” (Essay #1129). Code analysis led to thematic structuring of the data and identification of potential mediating variables as part of a sequential exploratory design (Creswell, 2009).

Overview of Results

The two reviewers coded in a reasonably consistent manner for *Improved connections with peers* ($kappa = .70$) and *Improved knowledge of wellness* ($kappa = .90$) (Neuendorf, 2002).

Demographic data showed that peer connections were an essay topic in every demographic category (gender, residency, ethnicity), with comments about peer connections ranging from 93% (non-white students) to 100% (out of country students, female students). The statistics for wellness were more varied. A little more than half of the women (51%) and men (58%) wrote about wellness in their final essays.

Peer Relationships. In this study, 83% of students reported strong feelings of group cohesion. In some cases students reported feeling closer to members of this new college group than to friends back home. Students reported that the adventure program helped to develop trust with their new classmates—that their new classmates would “have their back” (Essay #1233).

Other students reported connecting to peers by disclosing fears about their own social shortcomings. These disclosures were often met with acceptance by group members, helping to develop trust and alleviate fears of rejection. These experiences were deeply appreciated by students and were reported as unique experiences different from the experiences of their classmates who they observed in the more traditional FYE classes.

Wellness. Another theme described in the essays (40%) involved the group campfire, which was the setting for the last class meeting. This class session focused on wellness issues, such as nutrition, sexuality, alcohol, and drugs. A number of students described how this class was engaging because of the trust and sharing of personal stories supporting curricular messages

about making good choices. A more in-depth analysis of the Wellness node resulted in three themes: 1) importance of the class pedagogy, 2) trust between the group members, and 3) ability to find students with shared values or similar views.

A notable feature in both the Peer relationship node and the Wellness node were feelings of trust, a connection that allowed students to “be themselves” and experience feelings of acceptance. Students reported similar experiences, such as; “everyday [the classes] made me more comfortable in public speaking and showing other people on the trip what I am really like” (Essay 1031).

It was during these discussions that many students expressed relief in finding others who shared their ideas, fears, or interests, especially in regard to drugs and alcohol. Students reported relief in learning that the peer pressure to drink alcohol was not as strong as they had assumed. Students reported feelings of relief when they realized others shared their moderate views of alcohol consumption. These students were relieved they would be able to “fit in” at college without resorting to heavy drinking. These feelings were reported as occurring at the campfire discussions in 40% of the essays.

These discussions seemed to shared a common theme. The students were developing trust and acceptance by a peer group during a time of transition. Unique to this particular program was the honest and engaging conversation reported as both unique and highly valued. It is a likely culprit leading to the differences in FYI scores between the adventure group and the more traditional FYE class. The mediating variable may be the open, honest, and accepting environment gained from how the students camped together. These results may help guide first year programming for college students in transition by highlighting the importance of trust and personal disclosure as mediating variables influencing student outcomes.

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Questions should be directed to Brent Bell: bbell@unh.edu

Life In and After the 'Lifeboat': A Multi-method Approach to Understanding Resilience in the Outward Bound Context

Amy Shellman, SUNY Cortland

Introduction

Increasingly, attention has been paid to programs that promote positive development rather than merely problem prevention, particularly in adolescents. Characteristics of these programs have been identified and include the following: a sense of safety; challenging and interesting activities, a sense of belonging, supportive relationships with adults, involvement in decision-making, opportunities for leadership, and community involvement (e.g., Gambone & Arbretton, 1997; Howell, 1992; Werner, 1993; Witt & Caldwell, 2005). A number of these characteristics have been shown to foster resilience, or one's ability to respond and adapt to challenging, adverse or stressful circumstances (Wagnild & Young, 1993).

Most would agree that a common goal of adventure programs is to serve as a positive change agent and research has documented an array of positive psychological outcomes (e.g., life effectiveness, self-efficacy, resilience, self-esteem) associated with participation in adventure education programs (Cason & Gillis, 1994; Ewert, 1983; Neill & Dias, 2001; Neill, Marsh, & Richards, 2003). Moreover, many adventure programs are intentionally designed to utilize a myriad of physical, emotional, and mental challenges in order to achieve certain desired outcomes. Such experiences may play an integral role in the development of resilience as participants learn to manage various unfamiliar and difficult challenges, thereby developing within them a new awareness of their own powers and capabilities. The purpose of this study was to determine the impact of an Outward Bound program on participants' perceived level of psychological resilience, explore the relationship between the development of resilience and specific program characteristics, and understand how participants interpret their experience with regard to resilience once they returned to their everyday lives.

Methods

This study used a quasi-experimental mixed method design. Participants of selected Outward Bound (OB) courses (minimum length = 10 days) comprised the treatment group and individuals enrolled in a general education course at a large Midwestern university served as a comparison group (N=72). Resilience was measured using Wagnild and Young's (1993) 25-item Resilience Scale (RS). Surveys were mailed to OB participants prior to their course start (N=319) and all participants who returned a completed pre-course survey (N=115; 36%) were sent a post-course survey following course completion. Post course surveys for the OB group also contained a Characteristics of the Experience Scale (CES) adapted from Sibthorp (2000) for the purpose of assessing how strongly participants felt different characteristics and components of their OB experience contributed to their personal development. Eighty-eight participants returned a post-course survey for an overall response rate of 27.5%. One open-ended question was included on the post-course survey asking participants to describe what they felt was the most valuable thing(s) they learned through OB. Seventy-nine of 86 participants (92%) completed this section. Responses were used to aid in identification of potential interview participants and were also coded and analyzed for themes relating to resilience.

Telephone interviews were conducted with selected OB participants three to four months following completion of their course. Effort was made to select a purposeful sample of

participants with the goal of trying to achieve a balance with regard to sex, and maximum diversity with regard to age, geography (i.e., state of permanent residence), and course length. Each semi-structured interview lasted between 30 minutes and approximately one hour. Interviews began with participants being asked to share why they chose to take an Outward Bound course, to describe their experience from day one, to share what they learned and also what their life has been like since returning home from OB. Interviews were transcribed verbatim and read multiple times in their entirety before being coded and categorized into themes for the purpose of data reduction (Creswell, 2007). Significant phrases pertaining to resilience were identified in the data, formulated into meanings and clustered into emerging themes. Notes were taken by the researcher immediately following each interview to summarize main ideas, record impressions, and enhance clarity when coding. Qualitative findings were examined in relation to quantitative findings to assess points of convergence and divergence.

Results

After screening, 86 matched questionnaires from the OB group and 69 matched questionnaires from the comparison group were retained resulting in a combined total of 155 matched sets. The treatment group ranged in age from 14 to 30 with a mean age of 17.3 years, and included 49 (57%) males and 37 females. The comparison group was comprised of 27 (40%) male and 42 female participants ranging in age from 18 to 27 with a mean age of 20.1 years.

To determine significant pre-existing differences between the groups prior to any treatment, ANOVA was conducted on the pretest scores obtained from both groups. A significant difference between groups was found at pre-test with the comparison group scoring significantly higher, $F(1, 153) = 8.66, p < .01$, on the resilience scale ($M = 5.80, SD = .58$) compared to the OB group ($M = 5.49, SD = .70$). Thus, ANCOVA was used to control for initial differences between the groups. ANCOVA results indicated that participants enrolled in OB reported a statistically significant increase, $F(1, 152) = 29.77, p < .01, \eta_p^2 = .164$, in resilience, while the comparison group indicated no significant change from pre- to posttest.

Results from the CES indicated that *having responsibilities, being involved in decisions, and achieving success* were the three experience characteristics most strongly associated with resilience scores. Among processing components, *one-to-one interactions, discussions with instructors, dealing with stressful situations, and maintaining a supportive atmosphere* were most strongly associated with resilience scores. Interview and open-ended question analysis revealed three primary themes relevant to resilience processes and outcomes. First, *perseverance and sense of accomplishment* were integral to the course experience and the outcomes achieved; participants described drawing on their course accomplishments to help them get through tough times after the course. Secondly, *awareness and acceptance of limitations/learning to deal with things outside one's control* was an important learning participants carried over into their everyday life, and finally, *social support*; support from instructors, as well as other group members, was important in helping participants negotiate and overcome challenges.

Discussion

The inherent structural components characteristic of many adventure programs, such as tackling challenging tasks (e.g., mountaineering) and stretching beyond preconceived capabilities allow participants a glimpse at what they were truly capable of achieving. Results of this study support the historical notion that Outward Bound and, more broadly, adventure education can enhance psychological resilience. Presenting opportunities for participants to set goals, step-up to

challenges, push through difficulties, make mistakes and experience failure creates a situation ripe for developing resilience. Perhaps the most important finding is in understanding the impact of the experience once participants return to their daily life. What happens after the course is still in some ways a mystery, but this study has shed some light on how participants conduct themselves after the course, and as a result of it. For many, the real sense of accomplishment that stems from the ability to persevere and achieve success in the face of challenge and uncertainty cannot be overstated. As this study suggests, it is this very sense of accomplishment that participants carry with them months, and maybe years, following their experience.

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Contact: Amy Shellman, Recreation, Parks & Leisure Studies Department, SUNY Cortland, PO Box 2000, Cortland, NY 13045. amy.shellman@cortland.edu

Resilience in Environmental Educators

Kelly Henderson & Tim O'Connell, Brock University

Background

Humans today are faced with unprecedented environmental challenges (Suzuki & McConnell, 2002). Issues such as climate change have recently gained more attention in the mainstream media. Most environmental educators are passionate about the natural world and weave themselves into their subject matter (May, 2000; Orr, 1998). As they teach about the environment on a daily basis and are distinctly aware of issues such as climate change, many environmental educators report negative emotional responses to the vast and complex nature of these challenges to the natural world. As Hicks and Holden (1995) indicated, individuals learning about global environmental challenges often experience feelings of despair. Similarly, Lertzman (2008) wrote that individuals could experience feelings of loss as a result of the destruction of places and species to the same extent as with the death of a loved one. Therefore, the purpose of this study was to examine how environmental educators experience resilience in the face of increasing challenges to the natural world.

Resilience has been defined as competence despite exposure to significant stressors (Carver, 1998; Garmezy, 1991; Garmezy, Masten, & Tellegen, 1984; O'Leary & Ickovics 1995). Resilience is comprised of dynamic components including an individual's environmental context and internal resilience factors. The environmental context is described by family, culture, community, and school and peer circumstances. Internal factors include an individual's emotional, cognitive, physical, behavioural and spiritual status (Kumpfer, 1999). These components interact to produce varying degrees of resilience within individuals (Carver; Garmezy, et al.; Kumpfer). Resilience research spans diverse fields including education, nursing, counseling, and youth studies. However, resilience and the resiliency process have been found to be similar regardless of the population and setting. In response, Kumpfer has developed the *Resilience Framework* as a broad organizational tool for resilience research that serves as the theoretical framework for this study.

Methods

Environmental educators who self-identified as remaining committed to and engaged in the field of environmental education despite having negative emotional responses to environmental issues were recruited to participate in this study. A semi-structured interview guide, using Kumpfer's (1999) framework to inform the questions, was utilized. Audio recorded interviews were conducted in person or by phone and data were transcribed immediately after. A follow-up phone interview occurred within three weeks of the initial interview. Transcripts were sent to participants for review and comment as suggested by Kvale and Brinkman (2009) and van Manen (1997). Transcripts were read and codes developed which contained "like meanings" (Lincoln & Guba, 1985). These codes were used to formulate themes (Kvale & Brinkman). The synthesizing of codes and themes describe and reflect the essence of the participants' experience (Kvale & Brinkman).

Results

A total of 8 environmental educators participated in interviews. On average, these participants had 12 years working in the field. The study included an equal number of male and

female participants, and included voices from the public and Catholic school system, provincial government, non-profit organizations, local farmers, and a conservation group employee. Preliminary findings suggest congruency between resilience in environmental educators and Kumpfer's (1999) *Resilience Framework*.

The findings indicate that while each participant experienced negative emotional responses to increasing environmental challenges, they successfully surmounted these feelings through the interplay of their environmental contexts and internal factors as suggested by the *Resilience Framework*. Although unique in their experience, these environmental educators reported utilizing some similar resiliency processes including problem-solving, goal setting, creating networks of support, adapting approaches, honouring one's life-stage, mentorship, and sense-of-purpose. Similarly, participants commonly reported choosing to *not* engage in projects that were met with large amounts of external resistance. The experiences of these individuals are congruent with those engaged in advocating for social change (Beardslee, 1989) and resiliency in children (Garmezy et al., 1984; Kumpfer, 1999; Sumsion, 2004). Overwhelmingly, these environmental educators responded that they "did not know what the future holds" for humans. When asked for predictions regarding the environment, most indicated dire outcomes. Despite this, each educator has remained in the field, even when alternative employment options were available and at times were more profitable, and for some, less worrisome. When asked, "Why bother?" with environmental education, a majority of participants responded with alarm "If not me, then who?" This sense of responsibility echoed through participant responses indicating a strong sense of purpose regarding environmental issues.

Discussion

The findings suggest environmental educators experience resilience in much the same way as others, including early childhood educators (Sumsion, 2004), civil rights workers (Beardslee, 1989), and youth at risk (Carver, 1998; Garmezy et al., 1984; O'Leary & Ickovics, 1995). Although environmental educators often face similar political and social challenges as other educators (May, 2000; Russell et al.; Volk, 2003), they also confront on-going threats to their subject matter - the natural environment (Hicks & Holden, 1995; Orr, 1992; Van Matre, 1999). Study data suggests that environmental educators are similar to those who engage in other forms of social transformation (Beardslee 1989; Kumpfer, 1999). However, with increasing global environmental challenges the demand for individuals with the resilience to confront such problems will increase. Understanding the process of resilience in environmental educators presents implications for both practice and future research, including providing environmental educators with workplace supports to help develop resiliency and examining how resiliency processes change over time.

This study was limited in scope by the number of participants interviewed. The voice of First Nation educators was not included due to difficulty in recruiting participants who met the study criteria. Additionally, the study pre-selected engaged and resilient environmental educators; further research may include environmental educators who are not resilient.

Environmental educators who have long-standing careers in the field demonstrate resilience, but to what degree resilience is experienced, and in what ways resilience is experienced has not been fully explored. This study begins to answer how, under what conditions, and to what extent environmental educators experience resilience.

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Contact: Kelly Henderson at: kh04do@brocku.ca or Tim O’Connell at: tim.oconnell@brocku.ca

Enhancing writing through outdoor recreation: An application of self-efficacy theory Stacy Taniguchi, John Bennion, Mark Widmer & Eliza Hoffman, Brigham Young University

Teachers promote learning and measure understanding through writing activities. Although these assignments are important to students because of the associated grades, the ability to write well is also a valuable life skill. Strong writing skills serve people well in professional settings, and these skills can provide unique personal benefits. One such personal benefit is the ability to write personal essays as a context for self-exploration, self-discovery and personal growth (Bennion & Olsen, 2002).

Another context for self-exploration and discovery is found in outdoor experiences. Participating in outdoor recreation provides individuals opportunities to face challenge and risk, resulting in physical and emotional stress (Taniguchi, Freeman, & Richards, 2005). The result of such experiences is a powerful context or mechanism for self-discovery and meaning.

This phenomenon of a meaningful learning experience is not new and educators assume that writing about such experiences can be beneficial. Meaningful personal essays allow self-exploration and discovery; they require students to take risks in their writing by sharing intimate and personal feelings. The process of introspection has risks and can be very awkward, but the only way to be a better writer is to be willing to take the risks.

This study explored the principle of generalization detailed in Self-Efficacy Theory (Bandura, 1997). Bandura suggested that increased efficacy generalizes within domains, and can even generalize across domains to dissimilar activities. Specifically, we investigated if increased risk-taking efficacy in outdoor recreational activities would generalize to risk-taking efficacy in personal essay writing. Overwhelming mastery experiences are among the most powerful influences that promote generalization. Overcoming a significant challenge can result in powerful feelings of competence. Those who master seemingly insurmountable challenges are likely to perceive other challenging activities as less intimidating (Bandura; Kelley, Coursey, & Selby 1997), resulting in a generalization that one can put forth the effort needed to succeed no matter what the undertaking might be (Bandura). A primary objective of both courses was to help students face challenge and risk in order to develop stronger personal essay writing efficacy and skills. Therefore, the purpose of this research was to determine if risk taking in outdoor experiences enhanced students' risk taking efficacy in writing personal essays.

Methods

A single factor, two group, quasi-experimental design was used to examine the influence of outdoor recreation experiences on risk taking in personal essay writing. Participating students registered for two courses, Outdoor Recreation Experiences and Writing Creative Nonfiction, during the same semester. These concurrent courses utilized both outdoor recreational activities and writing to emphasize self-definition of students. Each experience was followed up with group discussions focusing on the risks taken and how the students felt about their experiences with those risks. The Outdoor Recreation Experiences course was designed specifically to create overwhelming mastery experiences (Bandura, 1977). Students explored wilderness environments by participating in recreation activities such as backpacking, snowshoeing, cross-country skiing, and building and sleeping in snow caves. Students were then invited to write about their experiences for the Creative Writing course. Both vicarious experience, and verbal and written persuasion were introduced as sources of efficacy information.

Participants completed a pre-test and a post-test measuring risk-taking self-efficacy. One instrument focused on perception of skill mastery and risk taking in outdoor recreational activities (Cronbach $\alpha = .85$). The other instrument measured risk-taking efficacy in writing personal essays (Cronbach $\alpha = .95$).

In the following semester, another creative writing class, focusing on personal essay writing only, was taught by the same English professor and served as a comparison group. The same pre- and post-tests that were administered with the experimental group were given.

Change scores from the experimental group were calculated and compared to change scores from the comparison group. An ANOVA was used to test for significance between the treatment and comparison groups.

Results

Descriptive statistics showed that all of the mean scores increased in both the treatment and comparison group, yet, greater changes were evidenced in the treatment group. A dependent t-test comparing the mean difference scores of the subset totals of writing risk found that for all writing subsets the means were significantly higher for the post-test than for the pre-test, with the exception of editing/proofreading skills for the experimental group and gathering ideas for the control group, which were not significant as indicated in Table 1.

Table 1: Mean Differences in Writing Risk Post-tests

	M	SD	T	Significance
Gathering Ideas Risk				
Treatment Group	252.85	16.95	5.38	.000
Control Group	100.58	18.72	1.86	.090
Writing Environment				
Treatment Group	109.85	13.83	2.86	.014
Control Group	82.73	11.42	2.40	.037
Early Stage Writing				
Treatment Group	243.33	15.92	4.58	.002
Control Group	134.50	11.89	3.58	.006
Later Stage Writing				
Treatment Group	197.92	18.11	3.94	.002
Control Group	122.46	12.08	3.36	.007
Editing/Proofreading				
Treatment Group	40.82	6.56	2.06	.066
Control Group	15.00	2.13	2.33	.042

An analysis of variance (ANOVA) test was then conducted to explore the mean difference in change scores between the students who had and those who had not participated in the outdoor skills course and their perceived mastery of risk in their writing ($F(1, 19) = 6.707, p = .018, r^2 = .26$). The mean of the experimental group was significantly higher ($M = 4858.10, SD = 290.58$) than the mean of the comparison group ($M = 4438.64, SD = 430.21$).

Discussion

The analyses suggest that the treatment group members developed significantly higher risk taking efficacy in their writing environment than the control group. The significance found in the comparison of change scores and the increase of risk taking self-efficacy in the two writing courses infers that the variable of the outdoor recreation experiences enhances risk taking

efficacy in creative writing. In harmony with Self-Efficacy Theory, this study's results suggests that those who master challenges are likely to perceive other challenging activities as less intimidating, that one's increased self-efficacy in outdoor recreational activities leads participants to put forth the effort needed to succeed in the area of personal essay writing. This effort allowed individuals to venture into writing with more passion, description and risk to write about their personal feelings, therefore, enhancing and improving their personal essay writing skills.

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The Application Risk Homeostasis Theory to Climbers on Mt. Whitney

Whitney Ward, Southern Illinois University Carbondale

Background

There has been a significant attempt to understand the relationship between risk and benefit in outdoor adventure. The powerful influences that risk and benefit exert upon each other can cause individuals to risk everything for the opportunity of momentary benefit. However, to understand the relationship more fully, each facet of it must be studied. Many people have a general understanding of the relationship between risk and benefit. However, the understanding often misses the complex nature of the relationship (Delle Fave, Bassi, & Massimini; 2003). This misconception creates a need to gain a deeper understanding of the connections between risk and benefit. Most often, risk is associated and defined with negative connotations (Nichols, 2000; Renn, 1998). However, merely addressing risk from a negative viewpoint dismisses any associated benefits. For example, risk has been shown to be an integral part of an outdoor adventure experience (Horwood, 1999; Priest, 1999). Participants of outdoor adventure are in a constant state of flux trying to balance levels of risk and benefit. One such theory that can be used to help understand the complex risk and benefit equation is risk homeostasis. It was originally developed for use with traffic accident analysis and posits that individuals participating in any activity will accept a certain level of subjectively estimated risk in exchange for benefits they hope to receive from participation in the activity (Wilde, 2001). The risk can be to their health, safety, or anything perceived to be of value. While participating in an activity, a participant continuously evaluates the amount of risk exposure. After comparing this to the amount of acceptable risk, that participant will try to balance the difference by either pursuing activities with more or less risk based on what is subjectively acceptable. This idea is supported by Slinger and Rudestam (1997) who found that experience is an integral part of risk perception in adventure activities, and individuals with more experience need greater risks to have the same level of pleasure.

Individuals differ not only in the risks they are willing to take, but also in their ability to perceive risk (Wilde, 2001). Target risk is the point when the difference between benefit and risk is maximized. At zero risk there is no benefit, and when perceived risk is high, the expected loss is greater than the benefits received. Therefore, it is theorized that since there is no behavior or activity with absolute certainty, individuals will select risk where the difference between perceived risk and benefits are maximized. An individual's ability to perceive risk is influenced by subjectivity and originates from three sources: past experience, current assessment of the immediate situation, and degree of confidence (Wilde). This study applies the lenses of risk homeostasis to better understand the equilibrium of risk and benefit in outdoor adventure.

Methods

Based on its utility in examining human subjectivity, or an individual's point of view, Q methodology was used for this study. The basis of Q methodology is the Q sort technique and Q factor analysis. Previously collected data on Mt. Whitney, the Mt. Whitney on-line message board, and a review of the current literature were used to develop a concourse regarding perceptions of risk and benefit associated with Climbing Mt. Whitney. Forty-four statements were selected from the concourse to represent the various aspects (personal, physical, and social) associated with perceived risks and benefits. Forty eight study participants were recruited based

on their route selection in person at the trailhead or via online sources from among the thousands who attempted to climb Mt Whitney. They sorted the 44 statements in regards to their experience based upon that condition of instruction along a continuum from agree to disagree. Following the Q sort the participants also took part in a short semi-structured interview which was used to clarify and support the findings from the Q sorts. Q sorts were correlated and factor analyzed with the resulting factors representing viewpoints associated with perceptions of risk and benefit.

Results

Three risk and benefit factors emerged from the Q sort factor analysis data - aptly named Personal Apprehension, Physical Apprehension, and Social Apprehension. Each factor represented a unique but characteristic point of view of the participants in relation to their Mt. Whitney experience. 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. The three factors indicated aspects of personal, physical, and social apprehension. However, all three factors were bipolar, which meant that each factor represented opposing viewpoints - one aspect represented the risk and apprehension the other the benefits associated with climbing Mt. Whitney. The participants with positive correlations on the three factors focused on the personal, physical, and social risks and apprehensions. These participants reported that they had little to no experience on their route or on similar routes. However, the participants with more mountain experience (either on the route or similar routes) reported lower perceived risk associated with the particular route of choice and had negative correlations on the three factors.

Discussion

Risks and benefits are very subjective in nature. Any activity can be risky when an individual does not possess the required skill or experience to face the challenge, which influences their perception of risk. However based upon risk homeostasis theory, risk is an essential aspect necessary to fully experience the greatest benefits of any activity. Certain components of risk, such as uncertainty, even become beneficial. As in the case of one climber who stated, "I appreciate the sense of uncertainty that is inherent in climbing." Data show that participants tried to achieve a point of equilibrium between risk and benefit. As was shown in the following statement, "I enjoy the mountains, risk is a part of that, and the reward is worth it." Another climber stated, "I like routes that challenge me, so that, easy routes are fun, but I like things that push me a little bit." That participant had a negative loading on the factors and also selected a more technical route to reach equilibrium between his perception of the risks and expected benefits based upon his ability to perceive risk. Perception of risk is influenced by subjectivity and originated from past experience, current assessment of the immediate situation, and degree of confidence (Wilde, 2001). All three aspects were present in and supported by the data. The climbers with previous experience had negative correlations with the factors and were able to draw upon past experience. Their experience also provided them with a sense of confidence. One participant simply stated, "I have plenty of experience and training. Done it before."

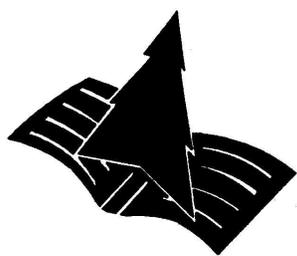
Mountaineering does involve inherent aspects of risk. However, those individuals that participated in mountain type experiences did not perceive risk taking as the objective, but merely a means to an end – to receive a benefit. The level of acceptable risk in outdoor adventure activities is reduced as an individual gains experience in a mountain environment. They in turn seek out opportunities that provide more challenges and greater potential for risk,

and therefore regain equilibrium by pursuing more difficult routes. This study provided a greater understanding of perceptions of risk and benefit associated with climbers on Mt. Whitney by utilizing the risk homeostasis framework.

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Contact: Whitney Ward, Southern Illinois University Carbondale, wward@siu.edu



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