



Abstracts from the
Coalition for Education
in the Outdoors
14th Biennial Research Symposium

Held at
**BRADFORD
WOODS**
Indiana University's Outdoor Center
Martinsville, Indiana
January 12-14, 2018

Compiled by

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Preface

Welcome to the 14th Biennial Coalition for Education in the Outdoors Research Symposium. Whether you are using this compilation as an attendee or reading it after the event, we are glad to include you in the work of the Coalition.

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 founders of CEO envisioned 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, *Research in Outdoor Education*. Indiana University's Bradford Woods was chosen as the site of the first symposium in 1992 and has hosted every one since then.

Twenty-six years later, the CEO Research Symposium has increased substantially in attendance and in the number of papers presented. Fortunately, the event is still not too large and retains the informal and highly interactive atmosphere that people valued from the start. It attracts scholars and practitioners from a wide variety of academic disciplines and outdoor education professional settings. The purpose has remained the same.

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

We are pleased to announce two recipients of the Coalition for Education in the Outdoors Graduate Student Research Scholarships. Robert Warner (Ohio University) and Sharon Tessneer (Indiana University) were chosen in a blind review of abstracts with a graduate student as the lead author. These scholarships are funded by proceeds from the raffle held during the 2016 symposium. A similar raffle will be held at this symposium.

We owe thanks to many people who make this event possible. The CEO Research Committee and the authors, all listed later, are the ones who bring this program to life. Garrett Hutson, Brock University, Jayson Seaman, University of New Hampshire, Jim Sibthorp, University of Utah, Victoria Povilatis, University of Utah, Michael Riley, University of Utah, and Troy Bennett, University of Utah helped greatly in the initial stages of putting the program together. Kendra Liddicoat, University of Wisconsin – Stevens Point, did yeoman's work in coordinating the review of abstracts, helping prepare the schedule of events and compiling the book of abstracts. She was capably assisted in the compiling process by her student assistant Julie Dickson.

Chad Simmons and his staff at Bradford Woods make getting there and being there so comfortable. Special thanks also go to acting director Tim Street for making welcoming remarks to participants on Friday afternoon. Publishers, including Cornell University Press, Teachers College Press, and Human Kinetics have donated books for our raffle, the proceeds of which fund scholarships for graduate-student authors of outstanding research presented at the symposium. 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.

Sharon Todd and Charles Yaple
For the CEO Research Committee

Coalition for Education in the Outdoors Research Committee

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Texas A&M University

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PRE-SYMPOSIUM SCHEDULE OF EVENTS

Health and Outdoor Settings – The Role of the CEO

Friday, January 12, 2018

	<u>Topic</u>	<u>Location/Leaders</u>
7:30 – 8:45 a.m.	Breakfast	Bradford Manor Dining Room
9:00	Welcome/Overview	Bradford Manor Conference Room (Basement Level) Dr. Alan Ewert, Sharon Tessneer, and Ryan Zwart
9:20	Human Health and Outdoor Settings: Introduction and Overview	Dr. James Farmer
9:45	“What We Know” Session	Session Lead: Dr. Jill Overholt
10:15	Break and Connecting with Colleagues	Bradford Manor Dining Room
10:30	“How Do We Know It:” Data Collection, Tools, and Practice	Bradford Manor Conference Room (Basement Level) Session Leads: Sharon Tessneer and Ryan Zwart
12:00 noon	Lunch	Bradford Manor Dining Room
1:00 p.m.	Findings and Research Gaps	Session Lead: Dr. Michael Gass
2:00	The Role of the CEO	Session Lead: Dr. Denise Mitten
2:45 – 3:00	Drawing Conclusions/That’s a Wrap!	Bradford Manor Conference Room (Basement Level) Dr. Alan Ewert
Recorder	Kristina Anderson	

SYMPOSIUM SCHEDULE OF EVENTS

Friday, January 12, 2018

1:00 – 4:00 p.m. 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).

3:30 Meet and Greet – *Carr Center*

4:15 Opening Session – *Carr Center*

Words of Welcome	Sharon Todd, CEO Research Committee
	Tim Street, Bradford Woods
Logistics	Chad Simmons, Bradford Woods
Symposium Overview	Sharon Todd

5:30 Dinner – *Baxter Dining Hall*

6:45 Featured Topic: Health and Outdoor Settings – *Carr Center*

Alan Ewert & Kristina Anderson, Indiana University

Following a pre-symposium research session hosted by Indiana University earlier in the day, we will share our discussion of human health and outdoor settings, including what we know, how we know it, research findings and gaps, and the role of the Coalition for Education in the Outdoors in studying this important topic area.

7:15 Issues and Challenges in Outdoor Education Research: Setting our Agendas at CEO - *Carr Center* Sharon Todd, CEO Research Committee

7:25 Research Presentation Session I – *Camp and Youth Development – Carr Center*

Prsident: Kendra Liddicoat, University of Wisconsin – Stevens Point

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.

7:30 Fostering Distinct and Transferable Learning via Summer Camp

Jim Sibthorp, Cait Wilson & Lisa Meerts-Brandsma, University of Utah; Laurie Browne, American Camp Association

7:50 "I Am..." Priming the Pump for Adolescent Identity Development

Ann Gillard, Hole in the Wall Gang Camp; Cindy Hartman & Patti Craig, University of New Hampshire

8:10 The Role of Repeated OAE Courses in a Multi-Year Youth Development Program

Lisa Meerts-Brandsma & Jim Sibthorp, University of Utah; Sara Morrison, North Carolina Outward Bound

8:30 An Investigation of Parents' Perceptions of the Value of a Summer Camp Experience

Dan McCole, Michigan State University; Andrew Bobilya, Western Carolina University; Betsy Lindley, Utah Valley University; Tom Holman, Southeast Missouri State University

8:50 General Discussion

9:00 Poster Session and Evening Social – *Bradford Manor*

The Developmental Networks of Outdoor Education

Mike Riley, University of Utah

Friluftsliv 2.0: Understanding Scandinavian Outdoor Tradition and Its Impact on Nature Connections in a New 'Place'

Patrick Maher, Cape Breton University

Effects of Participation in a Semester Boarding School on Students' Biophilic Expression

Nathan Meltzer, Millbrook School; Andrew Bobilya, Western Carolina University; W. Brad Faircloth, Montreat College

Characterizing Student Motivations in Outdoor Recreation Program Activity Offerings

Ryan Zwart, Indiana University

Parental Motivation toward Youth Summer Camp Enrollment

Marcus Nack, Kendra Liddicoat, Rebecca Franzen, Catherine Scheder & Jordan King, University of Wisconsin-Stevens Point

Saturday, January 13, 2018

7:30 a.m. Breakfast – *Baxter Dining Hall*

8:25 Research Presentation Session II – Diversity, Equity, and Inclusion in Outdoor Education – *Carr Center*
Prsident: Andrew Bobilya, Western Carolina University

8:30 **Investigating Inclusive Praxis among Outward Bound Instructors**

Robert Warner, Bruce Martin, Andrew Szolosi & Laura Harrison, Ohio University

8:50 **The Effectiveness of Outdoor Behavioral Healthcare on Adolescents with Mental Health Issues**

Michael Gass, University of New Hampshire

9:10 **Examining Long-Term Transfer Between Socioeconomically Differentiated Students in Outdoor Adventure Education**

Lisa Meerts-Brandsma & Jim Sibthorp, University of Utah; Shannon Rochelle, NOLS

9:30 **Beyond Inclusion: Outdoor Experiential Education as a Whiteness Education**

Franklin Vernon, University of Wisconsin-Madison; Jayson Seaman, University of New Hampshire

9:50 **General Discussion**

10:00 Refreshment Break – *Carr Center*

10:20 Research Presentation Session III – Impacts of Outdoor Education – *Carr Center*

Prsident: Denise Mitten, Prescott College

10:25 **Closing the Loop: A Multi-Year Study of How to Measure Change**

W. Brad Faircloth, Montreat College; Andrew Bobilya, Western Carolina University

10:45 **Turning 40: Just How 'Life Changing' are School Expeditions?**

Maria Jose Ramirez & Pete Allison, Pennsylvania State University; Tim Stott, Liverpool John Moores University; Clive Palmer, University of Central Lancashire; Kotryna Fraser, University of Edinburgh

11:05 **Sense of Place in NOLS Education: A Case Study**

Liz Peredun, NOLS; Garrett Hutson, Brock University; Shannon Rochelle, NOLS

11:25 **Gains in Outdoor Pursuits Program Outcomes of Sense of Community, Sense of Place, Nature Relatedness, Well-being and Resilience by Level of Development**

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

11:45 **General Discussion**

Saturday, January 13, 2018 (continued)

12:00 Lunch and Free Time – Baxter Dining Hall

1:25 Research Presentation Session IV – Physical and Mental Responses to Outdoor Education – Carr Center
Prsider: Amy DiRenzo, SUNY Cortland

- 1:30 **Body Image in Professional Women Guides**
Christine Brice, Denise Mitten, Chiara D'Amore & Laurie Frank, Prescott College
- 1:50 **The Impact of an Organized Night Walk on Brain Wave Activity and State-Trait Anxiety**
Brad Daniel, 2nd Nature TREC; W. Brad Faircloth, Montreat College
- 2:10 **Autonomic Responses to Adventure Experiences: An Alpine Tower Experience**
Sharon Tessneer, Indiana University
- 2:30 **"Levels of Nature" and Stress Modification**
Alan Ewert, Indiana University; Yun Chang, Illinois State University
- 2:50 **General Discussion**

3:00 Refreshment Break – Baxter Dining Hall

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

4:45 Research Presentation Session V – Environmental Attitudes and Behaviors – Carr Center
Prsider: Garret Hutson, Brock University

- 4:50 **Sustainable Adventure? Outdoor Adventure Education as a Way of Life**
Paul Stonehouse, Green Mountain College
- 5:10 **The Use of Education Programs in Community Gardens, as an Intervention to Develop Families' Environmental Behavior**
Konstantinos Stavrianakis & James Farmer, Indiana University
- 5:30 **Applications and Attributes of Conservation Psychology Measures**
Kelly Cartwright, College of Lake County; Denise Mitten, Prescott College
- 5:50 **Effects of National Park Landscapes on Inspiration: An Exploratory Study**
Brad Daniel, 2nd Nature TREC; Jim Shores, Asbury University; W. Brad Faircloth, Montreat College
- 6:10 **General Discussion**

6:30 Dinner – Baxter Dining Hall

7:45 Evening Forum – Baxter Dining Hall
Raffle Drawings
Brief highlights of afternoon breakout discussion groups
About *Research in Outdoor Education*
Symposium summary and evaluation – CEO Research Committee

9:00 Social – Baxter Dining Hall
The Saturday evening social will include a CASH BAR provided through Big Red Liquors. Wine and beer will be available at \$3.00 per serving.

Sunday, January 14, 2018

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

*Thank you for being here. See you in 2020.
Travel safely.*

Fostering Distinct and Transferable Learning via Summer Camp

Jim Sibthorp, Professor, The University of Utah

Cait Wilson, Ph.D. Student, The University of Utah

Lisa Meerts-Brandsma, Ph.D. Student, The University of Utah

Laurie Browne, Research Director, The American Camp Association

Summer camps are increasingly being recognized as rich contexts for youth development (Garst, Browne, & Bialeschki, 2011). Camps are frequently linked to social-emotional learning, and research in camp specific settings often report youth development in outcomes such as friendship skills, relationship building, and working with others (Thurber, Scanlin, Scheuler, & Henderson, 2007). Despite the number of outcome studies, most camp-related research neither directly addresses the issues of transferable learning nor identifies the lessons that are most distinctly aligned with the camp experience.

In addition to outcomes, camps have become increasingly interested in understanding the mechanisms of camp that drive learning and growth (Garst, 2010). Such research is mostly interested in the underlying processes at summer camps and is related to the work on Camp Program Quality (Akiva, 2010). Commonly identified camp mechanisms or elements of program quality include staff-youth interactions, feelings of safety, program structures, and opportunities for skill development (cf., Akiva).

In an effort to better understand how summer camps are both similar and different from other developmental contexts, we completed phase 1 of a 5 year study in the summer of 2017. The purpose of this phase was twofold: 1) to identify camp outcomes common to and distinct from other youth programs, and 2) to identify mechanism facilitating learning and growth common to and distinct from other youth programs.

Methods

To inform this purpose, we interviewed 64 previous campers between the ages of 16 and 23; each study participant had attended camp in the United States as a camper for a minimum of three weeks during childhood. All participants were referred to us by a stratified sample of camps accredited by the American Camp Association; the camps were intentionally selected to represent a wide range of accredited camps operating in the US. The previous campers interviewed had applied to camps for summer employment but had not yet worked at a camp when they were interviewed.

Each semi-structured interview was conducted via phone, took about 25 minutes, and was recorded and transcribed for analysis. Two coders independently coded each of the 64 interviews using structured coding to align with the foci of the study. Disagreements were rare and consensus of code assignments was realized in approximately 99% of the cases.

Results

The outcomes identified through the interviews were generally typical of those attributed to youth programs and included a variety of interpersonal skills such as teamwork, relationship skills, and skills to live with peers. Intrapersonal skills such as self-identity development, inclusive mindset, emotion regulation, and independence were also commonly reported. The most commonly reported mechanism associated with outcome development were experiential learning, safe and supportive environments, interaction with camp staff, other program

participants, and separation of time and space. Most of these findings remain consistent with the broader literature on the outcomes and desirable qualities of youth programs.

There were two aspects of our findings that did point to important qualities of summer camps that varied from the more traditional youth program literature. First, sport and leisure skills were commonly reported and, simultaneously, identified as the least commonly used skills in everyday life. Clearly youth are learning to shoot rifles, play soccer, and rock climb at summer camps, but what is the value of these activities if they are no longer directly useful outside of camp? Common to other youth settings, these activities drive interest and engagement. Youth mentioned practicing difficult skills or persevering in the face of hardship to participate in fun and engaging leisure activities. They had to carry canoes over long portages to canoe camp and had to get along with others living in their modest camp cabin in order to attend theater camp. The real focus of their passion was neither carrying a heavy canoe for a mile nor living in a small, dirty cabin with seven other youth, but rather the excitement of a canoe expedition into the wilderness or an opportunity to engage in performance arts.

Second, a major theme was the value of separation in time and space from their lives outside of camp. This separation was discussed in 3 main ways. 1) Insulation from the external context and influences allowed youth to develop independence from their parents/friends/family and also forced them to make new social connection. 2) The lack of external influences allowed camp culture to develop in a bubble of sorts and allowed the camp, the camp staff, and the youth themselves to effectively cultivate the culture they sought. This culture was often viewed as safe and supportive with a value system that supported trying new things and being true to one's self. 3) A related theme was a break from technology, as most camps do now allow youth to use electronics, social media platforms, or mobile phones. Thus participants noted how relationships developed over time unmediated by electronic interactions typical outside of camps.

While neither outcomes nor mechanisms, three other themes were observed in the data that are worth noting. First, summer camp was often discussed as complementary to school. Some kids were bullied at school, and saw camp as a social respite from school. Others were not especially successful at school and realized success in camp. One interview specifically noted how she was a straight A student in school, and camp helped her to develop comfort with being "mediocre". Second, camp is a "north star" or "anchor" activity for many of the campers in our study (cf., Deak, 2002). Some of these kids really found a "home" at camp –something that they looked forward to and where they identified with the social group. Third, when pressed during the interviews, many acknowledged that the most salient lessons from camp were lessons they would have eventually learned through other life experiences, but that camp accelerated this learning.

Discussion

Despite the clear weaknesses in our study design, such as tapping a population with an inherently positive bias toward camp (potential employees), the results do point to areas ripe for further study. Specifically, our field needs to better understand the outcomes of summer camp that are the most distinct to summer camps. If kids can develop self-confidence in a wide range of youth programs, then summer camp can only position itself as developmentally equivalent to other high quality experiences for youth. However, if camp, by virtue of its remoteness and culture, can accelerate social and emotional learning in ways uncommon in other contexts, then summer camps can distinguish their programming from alternatives. Likewise, if we can more clearly articulate the mechanisms that best facilitate youth development at summer camps,

practitioners and programmers can proactively work to leverage these aspects of camp in developmentally appropriate ways. Notwithstanding the value of understanding the most likely outcomes or high potential mechanisms at camps, it remains clear in the data that many campers had very personal and individual experiences at camp. That is, for these campers, the camp experience aligned well with their own past experience, developmental needs, future directions, and time specific needs. Ultimately camp, like all youth programming, needs to fit with the youth's needs, wants, interests, and life beyond the program. As we move to understand both the aspects of camp programs that camps can control and the specific needs of the individual campers, as a field we can continue to offer high yield programming to the kids who will most benefit from attending summer camp.

References

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“I Am...” Priming the Pump for Adolescent Identity Development

Ann Gillard, The Hole in the Wall Gang Camp

Cindy L. Hartman & Patti J. Craig, University of New Hampshire

Identity formation is an important task of adolescence, a life phase in which young people try out possible selves (Erikson, 1968). In the effort to commit to a sense of identity, identity exploration is a process of examining and sorting through options of who one might be (Marcia, 1966). One setting for identity exploration can be youth recreation programs. In youth programs, such as in recreational-based programs in the outdoors or at camp, adolescents have opportunities to “re-create” themselves. Youth program professionals have an opportunity to “prime the pump” of adolescent identity development in these programs.

This study investigated the potential effects of a residential camp program on participants’ self-described identity narratives at the beginning, end, and several months after the program. Participants were youth aged 16-18 living with serious illnesses who completed the “I Am Poem” at each time point. We explored (1) patterns in responses to prompts in the “I Am Poem” activity at each data collection time and (2) program-related aspects in the responses at each time.

Theoretical Foundations

This study was informed by scholarship in identity development and in recreation studies. First, identity development in this study specifically focused on process-specific components of identity exploration: self-discovery and self-construction (Schwartz, Kurtines, & Montgomery, 2005). Self-discovery is an intuitive feeling of alignment between one’s authentic self and possible other identities. In self-discovery, individuals engage in emotionally focused strategies to identify their own potentials and to create goals and pathways to experience those potentials. Self-construction is a rational consideration of identity potentials in which individuals use cognitive strategies such as problem solving and decision making to select the most favorable identity. Youth recreation programs offer many flexible and rich opportunities for adolescents to experience self-discovery and self-construction in adolescent identity exploration.

Second, recreation in this study specifically focused on the recreation “experience.” Three phases comprise the recreation experience: anticipation, participation, and reflection (Rossman & Schlatter, 2015). The anticipation phase involves participant expectations: how they are discovered or manipulated and how constraints are navigated or negotiated. For example, anticipation could involve preparing and packing gear or considering one’s goals for the program. The participation phase involves the social or physical activities of the program. The reflection phase involves contemplating the meaning of the program and the application of lessons to other parts of life. Often, the participation phase is the only phase that receives attention. Expanding the program to include anticipation and reflection phases can further deepen the meaning and utility of the program for participants, especially for programs that aim to influence adolescent identity development.

Methods

The participants in this study attended Hero’s Journey, a free-of-charge summer program operated by The Hole in the Wall Gang Camp. Hero’s Journey serves 90 adolescents each summer over six one-week residential camp sessions focused on wilderness first aid and search and rescue, and personal and team challenges. Participants of Hero’s Journey are people aged 16-

18 living with serious illnesses such as cancer, HIV/AIDS, sickle cell disease, hemophilia, and metabolic diseases.

Participants completed the “I Am Poem” (IAP) at three time points. The IAP has been used in various educational contexts to elicit identity-related narratives and has 18 prompts (e.g., “I am...”, “I feel...”, “I pretend...”). Program staff administered the IAP to participants at the beginning and end of the program, who voluntarily reflected on and shared their responses as a structured large group discussion. Twenty participants also completed an online IAP four or five months after the program.

Data were analyzed using thematic analysis to formulate themes and find common patterns across participants’ written narratives (Braun & Clarke, 2006; 2012). An audit trail established trustworthiness and the researchers met to discuss, define, and delineate the themes, coming to agreement on all themes and data.

Results

Analyses revealed several themes at each time point. At the beginning of the program, participants exhibited positive self-regard (“I am whoever I want to be”), angst (“I hear ‘you can’t do it’”), hopefulness (“I want to achieve all my goals”), desire to connect (“I see people supporting each other”), and program-related nervousness (“I wonder if I can do all the activities”). At the end of Hero’s Journey, participants exhibited powerfulness (“I am a warrior”), feelings of connection to others (“I touch the hands of others I have come to know and love in these short few days”), concern about returning from the program (“I wonder if I will be able to carry this vibe home”), discomfort (“I want to go home soon”), and peacefulness (“I hope that life will be like this forever”). At home after the program, participants exhibited stress (“I pretend to be ok”), looking toward the future (“I hope to make my family proud as a U.S national guard soldier”), contentment (“I feel amazed”), and reminiscing (“I touch the rope on my wrist which serves as a reminder of my journey”).

Program-related themes emerged at each time point, revealing a desire to get a lot of out of the programs at the beginning, concern about returning home, and nostalgia for some participants several months later. Interestingly, no illness-specific themes emerged from the data. While a few participants mentioned illness, (e.g., “I am living with the disorder, depression”), there were not enough instances to warrant a theme or to shed any light on the identities of adolescents specifically with serious illness.

Conclusions

Findings from this study help us understand the self-descriptions of adolescents at different points during and after residential camp program and offer implications for programming at the anticipation, program, and reflection phases. First, many participants were open yet nervous about their upcoming program, so more attention to the anticipation phase is warranted. Second, more attention and planning for the return from the program can be included in the participation phase. Third, more support for identity development in life post-program could help alleviate stress and concerns about the future. From an identity exploration perspective, camps seem adept at offering opportunities for self-discovery and the emotional alignment with potential identities that come with it. However, camps seem less adept at offering opportunities for self-construction and teaching cognitive strategies for identity-related problem solving and decision making.

To better understand how youth programs can support self-discovery and self-construction of adolescent identities, we propose the “identity-based recreation program model” (Figure 1). In this model, themes across the three phases of the program highlight participants’ dominant experiences at each phase. Next, program design elements are suggested for each phase to optimize participants’ self-discovery and self-construction. Finally, program goals are offered for consideration at each phase that could orient program staff to the different identity-related needs of participants.

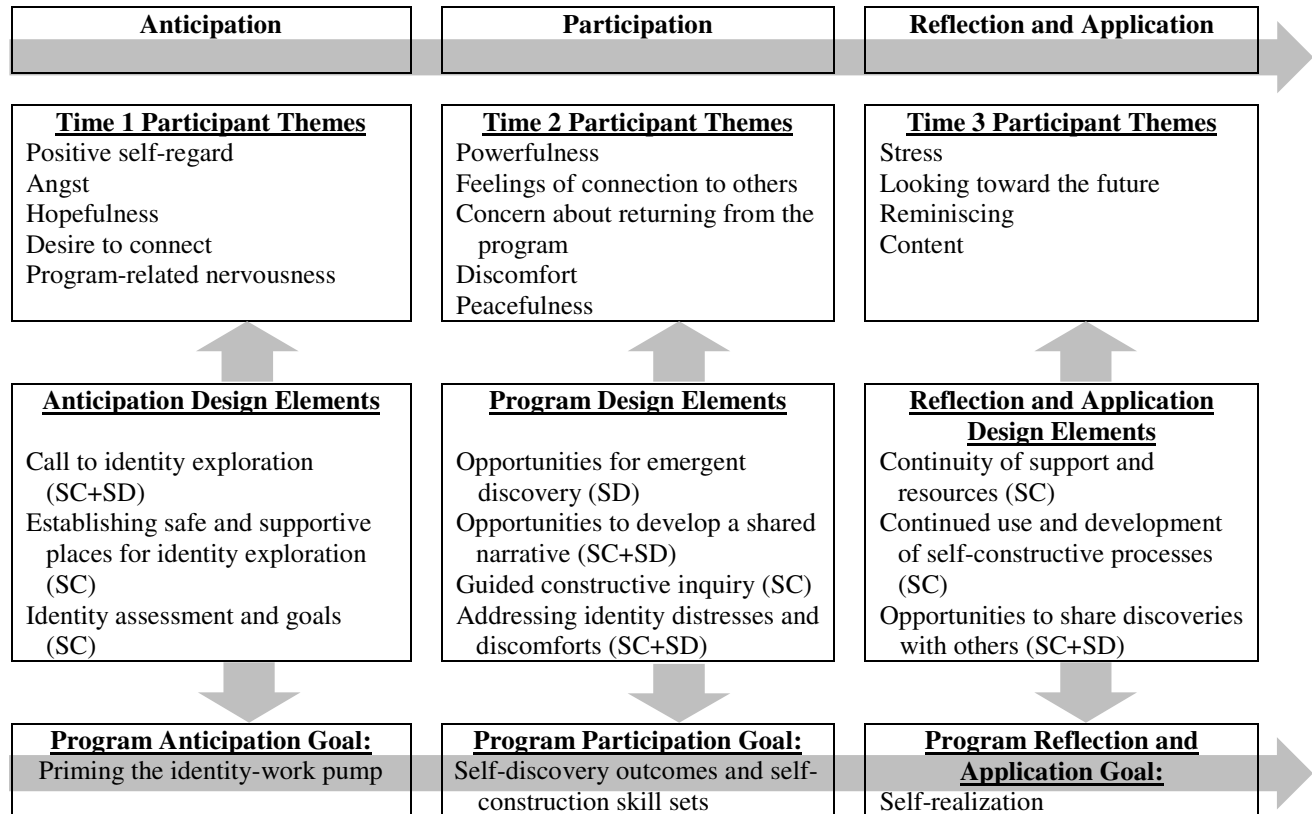
Future research could address limitations of this study. Participants completed a written narrative through the IAP and therefore no opportunities existed to probe responses to explore meaning. Conducting interviews or conducting mid-program IAPs could help deepen and clarify responses. To extend the generalizability of this study, further research could be replicated with other camp and youth programs to explore further potential differences in responses by program type or population.

This study adds to our understanding of how adolescents describe themselves at the beginning, end, and after a residential camp program. Youth programs such as summer camps are well-positioned to promote self-discovery through experiences of emotions, flow, and self-actualization. However, moving participants from self-discovery to self-construction after camp is an area in need of more attention. Outside the camp “bubble” (Johnson et al., 2010) could be structured opportunities for participants to engage in self-construction. Camps are well-suited to prime the pump of adolescent identity development.

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Figure 1. Identity-focused recreation program model.



Note: SC is self-construction and SD is self-discovery.

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The Role of Repeated OAE Courses in a Multi-Year Youth Development Program

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Multi-year youth development programs for underserved adolescents that target workforce and college skills are designed to work by exposing youth to positive adult mentors, offering out-of-school time activities like SAT prep courses, and, sometimes, sending youth on OAE experiences that build over consecutive summers. The OAE component is thought to be useful in teaching non-cognitive skills that can lead to success in life (Heckman & Rubinstein, 2001; Richmond, Sibthorp, Gookin, Annarella, & Ferri, 2017), and is an example of the type of enriching out-of-school time experiences that underprivileged youth are less likely to access (Snellman, Silva, Frederick & Putnam, 2015). However, the long-term effects of such programs are not widely understood.

The Walsh & Golins (1976) model of OAE proposes that bringing students into a challenging, new environment disrupts the way they operate. As students achieve mastery over systematically organized challenges, the disruption results in learning and meaning-making that students ideally transfer to future experiences. Research on OAE often shows a short-term increase in a variety of outcomes, but it has been harder to demonstrate the effects hold over time (Hattie, Marsh, Neill & Richards, 1997). This stems from the difficulties in conducting longitudinal research, such as keeping participants enrolled, and may also be affected by the discrete nature of the OAE experience—most students have one intense exposure to OAE in a lifespan that includes myriad experiences. Consequently, little is known about the effect of multiple OAE courses.

Because OAE research often depends on self-reports, it can be difficult to understand how they affect students. When students say they develop leadership skills, do the leadership skills manifest in differences that an outsider could see or that affect their life trajectory? Self-reports are easy and cheap to administer, but they can be biased by participants who inflate scores to make themselves look good, or who are not aware of their accurate level of performance on a given outcome. Fan et al. (2006) suggest that adolescents are an especially difficult population to study with self-reports because they report extreme levels on outcomes, and may not take surveys seriously. Informant reports are one way to improve the quality of the research by corroborating multiple perspectives. In OAE, this can occur by asking instructors to rate students on the same, self-report outcomes. Qualitative data, such as interviews, are another source to triangulate data.

The purpose of this mixed-methods study was a.) to examine the effects of OAE on adolescents in a multi-year youth development program; b.) to examine the effects of repeated OAE experiences; and c.) to use informant reports from course instructors to validate self-report data. The outcomes targeted in the study were instructor perceptions of youth ability, and youth's perceptions of their own ability, on five outcomes aligned with the program's goals: overcoming hardships, seeking help, being kind to others, taking initiative, and collaborating on group work. We also conducted interviews with instructors, and focus groups with students after their course.

Methods

We collected data in 2016 and 2017 from first and second year students enrolled in a multi-year youth development program. First year students (n=26) participated in a 22-day backpacking trip, and second year students (n=28) participated in a 12-day sea kayaking trip. The youth development program serves youth from Atlanta, Georgia who attend one of two Title 1 Focus

Schools, an indicator of low SES. A majority of students identified as racial minorities. Before and after the OAE experience, students completed a questionnaire that measured five outcome variables. These scales had previously been used with other expeditionary programs (e.g., Richmond et al., 2016; Sibthorp et al., in press). In addition, instructors completed questionnaires after the course that assessed the participants on the same outcomes. We also conducted semi-structured interviews with instructors after the course to identify characteristics that could explain how the OAE course affected the outcomes of interest, and focus groups with students.

Results

The final sample from 2017 included matched questionnaires from 44 (post data missing from 10) participants on 4 separate OAE courses. We conducted a 2 x 2 MIXED MANOVA to compare the effects of time (pre and post) and year in program (first-year and second-year) on self-efficacy in overcoming hardships (OH), self-efficacy in help-seeking behavior (HS), kindness to others (KTO), initiative-taking (IN) and group collaboration (GC). The main effect of time was significant, $p = .057$. More specifically, OH significantly increased, $p = .017$, means 78.35/82.45 (out of 100). The main effect of year in course was significant, $p = .045$, indicating a difference between first and second-year students. More specifically, OH (first-year means = 82.6/88.9, second-year means = 75.9/78.8 out of 100, $p = .01$), HS (first-year means = 83.2/88.3, second-year means = 75.3/77.7 out of 100, $p = .07$), KTO (first-year means = 6.9/7.0, second-year means = 6.5/6.5 out of 8, $p = .06$), IN (first-year means = 7.3/7.3, second-year means = 6.5/6.5 out of 8, $p < .01$.) and GC (first-year means = 7.4/7.1, second-year means = 6.7/6.9 out of 8, $p = .05$) were significantly higher for first-year than second-year students. Instructor assessments of students on the same variables showed only non-significant correlations. Students also reported in 2017 what about the course made the most difference for them: the instructor team (30.6 percent), other students on course (19.4 percent), inherent challenges (25 percent), being disconnected from media (16.7 percent), or other (8.3 percent).

The final sample from students who participated in 2016 and 2017 included matched questionnaires from 26 participants. We conducted one-way repeated measures ANOVAs to compare the effect of time (pre/post 2016 course, pre/post 2017 course) on OH and HS. The effect of time on OH was significant ($p < .01$, means = 68.2/71.97, 75.63/78.11). An ANOVA conducted on the effect of time on HS was also significant ($p = .02$, means = 67/67.8, 75/77.11).

The following themes emerged in semi-structured interviews in August 2017 with instructors teaching courses: students were motivated to attend to earn college scholarships; were mature in dealing with adult subjects; and generally need a lot of fun to buy into the programming. Instructors needed to focus on building rapport with students, which proved challenging at times due to different sociocultural backgrounds. Instructors easily identified the variables of interest as natural outcomes (hiking long distances is related to overcoming hardships; needing to collect water is related to initiative-taking), but struggled to identify specific activities they did to facilitate the outcomes. When students were stressed by difficult circumstances, the group did not function well and conflict management skills declined. Focus groups conducted with students after their course revealed that they learned perseverance in overcoming hardships and how to regulate their emotions in high-tension moments of conflict.

Discussion

This study replicated previous findings that showed non-cognitive factors increased over time, and that first-year students reported higher scores than second-year students (Richmond et

al., 2016). That first-year students would score higher than second-year students is, at first, a counter-intuitive finding. If students report higher scores on the outcomes after an OAE experience, it would seem that students with previous exposure would score higher than students with no exposure to OAE. However, it may be that returning students have a more realistic grasp of their abilities. Therefore, the lower scores may be a reflection of their more appropriate self-assessment rather than a true change in ability.

OAE practitioners often assume that certain outcomes will occur through the programming. But as Brookes (2003) notes, OAE has a lore about what it can achieve that has not always been empirically demonstrated. The data in this study point to overcoming hardship as a specific strength of OAE, but it is less clear that other targeted outcomes were thoroughly achieved. For example, the 2016-2017 data show that help-seeking self-efficacy significantly changed in the time between the two OAE courses rather than on the course, which would imply that another variable—in this case, possibly the overall youth leadership program—affected the change.

Instructor interviews showed that they saw overcoming hardship as a natural outcome of the course, but they struggled to identify what activities might affect other outcomes, such as kindness to others. Student interviews similarly pointed to overcoming hardship as an important outcome, but they also noted the importance of emotional regulation and conflict management, variables that were not measured. This could point to a breakdown between program development and staff training, a breakdown between program development and intended outcomes, or a failure of the measurement tool. Ultimately, the data in the study lack robustness to state conclusions with confidence, but instead point towards trends that deserve additional study.

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An Investigation of Parents' Perceptions of the Value of a Summer Camp Experience

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Attracting and retaining youth to overnight summer camps has long been an important issue for most camp directors. In a recent survey of camp leaders, 75% indicated that increasing enrollment was a priority for them and 71% indicated that it is important for them to improve their marketing efforts. (ACA, 2017). Increasing camp enrollment is as much about fulfilling a camp's mission as it is about the financial bottom line. Most camp missions include an aspect of positive youth development, and there is wide support for the positive benefits of attending summer camp (e.g., ACA, 2005; Bialeschki, Henderson, & James, 2007; Henderson, Bialeschki, & James, 2007; Mishna, Michalski & Cummings, 2001; Readdick & Schalter, 2005; Yuen, Pedlar, & Mannell, 2005). An important factor in increasing camp enrollment is the ability to send promotional messages via websites, social media, brochures, presentations, etc., that inspire parents to send their children to camp. To do this successfully, camps must first understand which messages are likely to trigger the desired behavior and whether a differentiated approach to promotional messaging is worthwhile. It is well-established in the marketing literature that different market segments have distinct demand functions for the same product (Dickson & Gintner, 1987). As this concept applies to summer camps, will certain messages be more effective with different segments of parents (e.g., parents of previous campers, parents of kids who have never attended camp, parents of boys, parents of girls, etc.)?

Camp trade magazines and popular press articles have documented several of the challenges to camp enrollment including: overprotective parents; kids' unwillingness to live without electronics/social media; increase in summer hours spent training for sports; and disinterest in the outdoors. Several of these have even been the topics of research involving camps (e.g., Garst & Gagnon, 2015; James, Henderson & Garst, 2008). Little research, however, has investigated which aspects of the camp experience parents of campers *and* non-campers most value. Such insights could inform promotional messages aimed to increase enrollment. In a large study of over 2,000 parents, Henderson et al. (2007) provided insights to parents' perceptions of changes in their children from a camp experience, however, this study focused only on parents who had already sent children to camp and didn't rank which outcomes were most valued, something important for creating effective promotional materials. Therefore, the purpose of this study was to better understand which potentially positive outcomes of an overnight summer camp experience parents value, and secondarily to examine whether those values are different for parents of campers than parents of camp-aged kids who do not attend camp. This study was not informed by a theoretical framework a priori and its intent was not to test a specific theory.

Methods

Researchers were provided with a list of 1,188 email addresses for parents/guardians whose children had attended the summer camp the previous summer (henceforth referred to as "camper parents"). Similarly, to represent parents of camp-aged kids who had *not* attended overnight summer camp (henceforth referred to as "never-beens"), researchers were provided with the email addresses for parents/guardians whose children had participated in some program

offered by the parent YMCA system, cross-checked to remove those who had attended the camp. Because it was possible that the parents/guardians on this list had sent their children to a different camp, a survey item asked whether the child had attended a different overnight camp. If respondents answered “yes” they were removed from this study. Invitations to participate in the survey were distributed to both groups via emails with links to an online survey, and two reminder emails were sent to those who had not yet responded following Dillman’s (2014) protocols for online research. Participants were offered the opportunity to be entered into a drawing to win a \$100 gift card. This method of incentive has been shown to increase response rate without altering the content of responses (McCole, 2015).

The survey included background items about experience with summer camping, demographics, and specific questions of interest to the camp, and used a 5-point Likert scale to rate the importance of several potential benefits of overnight summer camp. Respondents then ranked the three most important benefits. Additionally, camper parents rated items related to barriers and constraints to camp attendance, and never-beens were asked to rate and rank reasons they had not sent their child(ren) to camp. Survey items were developed by researchers who have experience managing and researching summer camps and content validity was established by a panel of camp leaders and board members. The survey was then piloted with a small sample ($n=10$) to ensure correct interpretation of the survey items and accuracy of the branching and display functions of the online survey. Because some families send more than one child to camp and some responses might differ for each child, the survey directed respondents to answer relevant items with their oldest child in mind. For the scale-rated items, mean scores were calculated and compared using independent t-tests. For the top-three ranking items, a weighted index score was calculated ranging from 0 – 100.

Results and Discussion

A total of 568 surveys were completed with 370 of these (29.6% response rate) from the camper parent sample and 198 responses (18.3% response rate) from the never been sample. After removing never been responses that indicated children had attended different camps, 148 responses remained from parents whose children had never attended any overnight camp.

The most important reason the never-been respondents hadn’t sent their children to camp was that they did not feel their child was ready. Given that camp leaders are concerned about the impact of over-parenting on their camps (ACA, 2017), this result raises the question of whether indeed it is the children or parents themselves who are not ready for camp. In fact, when researchers shared these results with camp leaders, this was the unanimous conclusion they all reached. It is, of course, possible that parents are genuinely intuitive about their children’s readiness and their perceptions are accurate. It is also possible that there is an interaction between these positions and a child might truly *not* feel ready for camp because the parent doesn’t believe they are. Thurber and Malinowski (2000) suggest that parent’s concerns about their children’s readiness for camp could actually create apprehension among the children themselves. If accurate, camps may consider using messages that reduce parents’ anxieties about camp such as a list of child readiness signs and/or real-time updates on social media and photos of their child’s experience. The never-been parents were also asked about the most important criteria they would look for if they were to consider sending their child(ren) to camp. Of the 11 listed criteria, the most important was “safety and security”. When asked to rank the most important benefits of summer camp, “having fun”, was far and away the most important for both

groups of parents. Together, these two results suggest that promotional messages must strike the right balance between safety and fun.

Beyond fun, however, the two groups of parents prioritized things differently. For instance, “being physically active” was the second highest ranked benefit among the never-been group, while it ranked seventh among camper parents. Another interesting result was that getting “a break from technology” was much more important to the camper parents than the never-beens. If some of the never-beens are actually projecting their own anxieties on their children, as proposed above, this result may be consistent with the above finding about never-beens feeling their kids are not ready for camp. Most camps do not allow electronic devices, so the idea of a technology break might be less appealing to an anxious parent who is concerned by the prospect of not being able to receive calls and texts from their child. A staple anecdote from most camps is that of parents receiving a letter in the mail from a kid who was homesick when she wrote, but was feeling much better by the time a concerned parent received the letter and called the camp. Finally, the results also showed that parents valued different benefits of camp depending on whether their child identified as a boy or a girl. For example, parents of boys indicated they value “a break from technology” much more than parents of girls.

The findings from this study show evidence that parents do indeed value different aspects of the camp experience depending on the context, and therefore suggest that a differentiated marketing strategy would be effective. However, research with additional camps is needed before generalizations can be made. As an exploratory study this research seems to have helped our understanding of the ongoing evolution of parent priorities and suggests that further investigation is warranted about the value different parent segments place on the summer camp experience. Moreover, since sustainable camp enrollment is best when both the parent *and* the child are eager to attend, a similar study about youth perceptions of the camp experience would seem equally worthwhile.

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The Developmental Networks of Outdoor Educators

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Traditional mentoring relationships are defined as an ongoing association between two individuals working for the same organization, often a senior-level staff member and a protégé, which is focused on the protégé's personal and professional development (Kram, 1985; Ragins & Kram, 2007). While traditional mentoring relationships may occur in organizations offering outdoor adventure education (OAE) programming, the transient nature of OAE employment, that is, instructors performing contract work for short durations before moving on to their next assignment, may preclude them from opportunities for this type of mentoring.

The developmental network perspective (Higgins, Chandler, & Kram, 2007; Higgins & Kram, 2001), which merges the fields of social network and mentoring research, reconceptualizes mentoring as a multi-relationship phenomenon and posits that individuals receive career and psychosocial support from multiple sources including more experienced colleagues, peers, family, or other community members. The developmental network perspective recognizes the value of having multiple developmental relationships as opposed to a traditional dyadic mentoring relationship, and seeks to understand who is currently providing a protégé support and how that support is being offered. An individual's developmental network is defined as the group of people a protégé believes is taking interest in her/his development and actively providing developmental assistance (Higgins & Kram, 2001).

In the mentoring literature, researchers study two distinct types of developmental assistance: career-related and psychosocial (Higgins & Kram, 2001; Kram, 1985). A developer offering career-related support helps the protégé gain exposure and visibility and learn the skills necessary to succeed in the workplace (Kram, 1985). On the other hand, a developer offering psychosocial support offers the protégé confirmation, affirmation, counseling, and friendship (Kram, 1985).

The purpose of this study is to use the developmental network framework (Higgins & Kram, 2001) to better understand how outdoor educators access developmental support. More specifically, it seeks to ascertain what types of career-related and psychosocial support instructors, at various stages in their career trajectory, find beneficial. Findings may help OAE administrators provide more effective developmental support to their staff.

Method

Semi-structured interviews were conducted in-person between August and September 2017 with 20 active outdoor education instructors. Participants had varying levels of outdoor education experience (6 participants with 0-5 years of OAE experience; 7 participants with 6-10 years of OAE experience; 7 participants with 11 or more years of OAE experience; of these 20 participants three hailed from outside the United States). While an attempt was made to interview an equal number of male and female participants, 11 female and 9 male participants were interviewed. The interviews were approximately 20 to 60 minutes in length, and were conducted in the mountain West. In addition to the semi-structured interviews, participants created a visual depiction of their mentoring network, which was collected by the interviewer and added to the data corpus. After transcription, the interviews were coded using a provisional coding technique (Saldaña, 2016) identified in the developmental network literature (Higgins, Chandler, & Kram, 2007; Higgins & Kram, 2001; Kram, 1985). Therefore, the type of support, either career-related or psychosocial, the way in which it was offered, and the individual offering the support were coded.

Results

Initial results from the interviews suggest that outdoor educators receive both career-related and psychosocial support from a constellation of developers; mostly senior colleagues and peers. In addition, interviewees mentioned family members, friends, former teachers or professors, and institutional structures, like skills-based trainings or professional development conferences, as valuable developmental tools.

Interviewees reported receiving career-related support from senior colleagues as well as peers. Participants mentioned that senior staff helped them understand organizational culture and navigate institutional bureaucracy. For example, a junior instructor, in describing a supervisor noted, “he provided a lot of information...on how to navigate staffing, and get more work...and develop as an instructor.” In addition, senior colleagues helped protégés understand how to advance in their careers, offered them job-related coaching and feedback, and role-modeled acceptable performance standards. On the other hand, the career-related support offered by peers often occurred informally. An instructor who described the importance of practicing technical skills with peers recounted, “we were actually about the same stage learning together, and so I guess we would support each other, we would go out and practice. We would demonstrate things for each other and try things out.” In addition to skill practice sessions, instructors also learned new instructional techniques or technical skills from observing and interacting with peers.

Instructors received psychosocial support, including confirmation, counseling, and friendship from both senior colleagues and peers. Both sets of developers offered verbal affirmation and encouragement, and the descriptions of the affirmation and encouragement were qualitatively similar. Other types of psychosocial support mentioned by participants included pushing or challenging the protégé to grow and develop and offering a listening ear.

Discussion

The outdoor educators interviewed for this project accessed developmental support in multiple ways, and the mentoring described by one instructor looked inherently different than the mentoring received by another. In addition, the type of support deemed beneficial to long-term growth varied, with some instructors preferring career-related support, while others desired psychosocial support. As suggested by Kram (1985), the most influential developers described by interviewees usually offered a mix of both career-related and psychosocial support. Also, an interviewee’s professional experience influenced the type of supports sought. For example, junior staff with zero to five years of OAE experience regularly discussed the career-related support they received from senior colleagues, and how being introduced to institutional procedures and norms was influential in their development. As career-related support correlates with long-term retention (Higgins & Thomas, 2001), finding ways to ensure junior instructors are being inducted into organizational culture and norms is of paramount importance for organizations employing OAE instructors.

A challenge facing OAE instructors is the feeling that growth is self-initiated. Interviewees frequently articulated feelings of uncertainty about how best to move forward and seek out continued development. This was further complicated by the fact that multiple interviewees expressed regret for not having a mentor, even after delineating multiple individuals who had or were investing in their growth. Chandler, Hall, and Kram (2010) suggested that equipping employees with the skills needed to further their development is a low-cost way to

foster employee growth and development, which could ultimately increase job satisfaction and employee retention (Higgins & Thomas, 2001).

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***Friluftsliv* 2.0: Understanding Scandinavian Outdoor Tradition and Its Impact on Nature Connections in a New ‘Place’**

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Research Background

This project seeks to understand the *friluftsliv* diaspora in Western Canada and determine whether the connections individuals and their families have to this uniquely Scandinavian outdoor tradition have any bearing on nature connections in a new ‘place’.

Scandinavian immigration to Western Canada is well documented, and the past/present cultural supports of the population, through clubs such as the ‘Sons of Norway’, are well established. The tradition of *friluftsliv* (literally free-air-life; although usually translated as outdoor life – a blend of outdoor recreation and outdoor education) is evident across the ‘homelands’ of Norway, Sweden and Denmark, where citizens enjoy strong family traditions of active lifestyles and connection to the outdoors through simple, self-directed, daily activities and by discussing the stories and identities that result (Dahle, 2003 – speaking specifically to Norwegian *friluftsliv*).

In contrast, many mainstream Canadian outdoor recreation/education experiences are increasingly ‘managed’ or directed by organizations and occur as isolated from, rather than integrated with, daily life. I suspect the same may also be true in the US. In addition, there are nature-development tensions rising in Western Canada (e.g. pipelines, the Oilsands, LPG ports, etc.) and these serve to further strain connections to nature for all Canadians.

This project is an exploratory look at how a unique outdoor tradition manifests itself in a new location, and how that manifestation serves to engage with critical conversations of human-environment relationships.

Cheng et al. (2003, p. 98) assert that, “management actions create, transform and destroy place meanings—meanings around which individuals and groups develop a sense of identity. Using Norway as a starting point, for most Norwegians, *friluftsliv* and its meaning in Norway begins with the writings of playwright Henrik Ibsen and his 1859 poem *Paa Vidderne* (On the Heights). This poem showcases the rights of Norwegian people to roam, explore, and be free to appreciate nature. Many Norwegian’s also link *friluftsliv* to the mountain Stetind, a visceral symbol on the landscape that shaped the eco-philosophy work of where Arne Naess (the father of Deep Ecology) and the exploration history of individuals such as Fridtjof Nansen.

Shifting back to North America, Williams, Patterson, Roggenbuck and Watson (1992) have long encouraged resource managers to attend to emotional and symbolic attachment to place generated through either past visitation or leisure organizations. Smale (2006) observed that, having assumed an individualistic approach to participation, leisure research has produced a poor understanding of place in the context of community, and has largely ignored the significance of place-relatedness in facilitating human capacity. So the question remains – how do immigrant individuals and their families connect in a new place, given the appreciative and often un-stated connections to place that exist in their homeland?

North American studies of place are done primarily through quantitative methods that disconnect individual stories and certainly disconnect nature and culture. In Scandinavia (Norway, Sweden and Denmark), the widespread tradition of *friluftsliv* is an imperative to contemporary culture. Although each country has its own nuances and history.

What is needed is a lens on how Canadians of Scandinavian descent connect to nature in Canada, and relate to its unique development pressures. As of yet, such global *friluftsliv*

comparisons are rare. For example, preliminary examination of *friluftsliv* in non-Scandinavian contexts has only recently begun anecdotally (see Gelter (2000) or Henderson and Vikander (2007)), while a growing body of English-language literature on *friluftsliv* has started to become available (Repp, 2004; Pederson Gurholt, 2008; Beery, 2013).

Research Objectives

The objectives in this project are:

1. To better understand *friluftsliv* in a non-Scandinavian context, but still within a Scandinavian immigrant/diaspora population;
2. To determine whether this outdoor tradition influences connections to a new place/location – Western Canada – where there are strong tensions between environment and development.

Research Methods

The method used in this project is semi-structured qualitative interviews and photo voice techniques. This interview set up is similar to work I have undertaken elsewhere, particularly in the Antarctic for my doctoral studies. Although I've not used photo voice as a method in the past, I have followed the lead of Loeffler (2004) who states that photos can capture greater levels of detail about the emotional meaning of experience than words-only data collection.

Results and Discussion

This research is currently underway. A number of interviews were conducted in August 2017, and more should be finished in Oct./Nov. Initial results situate *friluftsliv* in the 'new world' in a very different way than in Scandinavia. Respondents question whether their *friluftsliv* comes from Scandinavia or simply rural/remote living across Canada. They have clear Scandinavian affinities, but so many parts of their lifestyle are different in Western Canada. The opportunities afforded to them and their families, through basic infrastructure is so different. A full report will be available for the January symposium, and already some next steps for future research are becoming clear: one example being an expansion of the work to 'stepping stones' in Scandinavian immigration (many respondents speak to the role of their family being a Minnesota or Wisconsin Norwegian before coming to Canada).

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Effects of Participation in a Semester Boarding School on Students' Biophilic Expressions

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The natural world has been identified as a powerful component of outdoor and adventure programs (Herdman, 1994; Paxton & McAvoy, 2000). When this relationship has been given more programmatic attention it has often been via curriculum aimed at the development of more environmentally sustainable behaviors (Loynes, 2002; Sobel, 2008). The theory of biophilia, defined as “the innate tendency to affiliate with life and lifelike processes” (Wilson, 1984, p. 1) may help us better understand this unique relationship. Biophilia provides a comprehensive framework for understanding how people relate to the natural world. Through its articulation of nine unique “biophilic expressions,” the theory acknowledges a broad spectrum of ways of relating to and interacting with the natural world (Kellert, 1997; Wilson, 1984). These biophilic expressions consist of the aesthetic (the attraction and appeal of nature), dominionistic (mastery and control of nature), humanistic (emotional bonding with nature), moralistic (ethical and spiritual relation to nature), naturalistic (exploration and discovery of nature), negativistic (fear and aversion to nature), scientific (knowledge and understanding of nature), symbolic (the use of nature as a source of language), and utilitarian expression (the derivation of material and physical benefit from nature) (Kellert, 2002, p. 130).

Biophilia is believed to be an evolutionarily ingrained part of human nature, encountered across humanity independently of “group affiliation, history, and culture” (Kellert, 1997, p. 6). Each person’s pattern of biophilic expression results from the combination of social learning, cultural conditioning, and direct experience with the natural world (Shorb & Schnoeker-Shorb, 2010). The Kellert-Shorb Biophilic Values Indicator (KSBVI) is a 99-point questionnaire that was designed to reveal one’s *biophilic profile* or their relative expressions of each of the nine biophilic responses at a given moment in time. Biophilia is beginning to enter the adventure education (AE) literature as a framework to better understand how participants relate to the natural world and the KSBVI has had limited use in AE or in a pre- post- format. The KSBVI has recently been used to investigate the potential impact of college outdoor orientation program participation on one’s biophilic expression (Meltzer, Bobilya, Mitten & Faircloth, 2013; Meltzer, Faircloth, Bobilya & Mitten, 2014). The KSBVI has not been used with high school students or in an outdoor-focused boarding school context. Therefore, the purpose of this exploratory study was to understand the effects of participation in an outdoor-focused, semester boarding school on student’s relationships with the natural world and to better understand the utility of the KSBVI.

Methods

The Outdoor Academy (OA) of the Southern Appalachians is a semester boarding school for tenth-grade students located near Brevard, NC. Students attend OA for either their fall or spring semesters, and complete the remainder of their high school education at their home school. On campus, students take college-preparatory level classes. OA integrates experiential learning throughout its curriculum and students spend time honing leadership and technical skills while backpacking, white water canoeing, and rock climbing. Other elements of the school's values and curriculum include the development of an intentional community, deep immersion into many aspects of Appalachian culture, utilization of their forested campus, and a daily sunrise walk. Students completed the KSBVI at the start and finish of their semester at OA.

Students were enrolled in the program for four months from August 2013 - December 2013 or from January 2014 to May 2014. The sample, ($n = 38$), consisted of 19 males and 19 females ages 15-16 years. Thirteen participants had previously completed another wilderness experience program and 32 participants had previously been to an overnight or week-long camp.

The KSBVI is a 99-item quantitative measure that asks participants to rate the degree of agreement with each statement using a 4-point Likert scale (strongly agree to strongly disagree; Shorb & Schnoeker-Shorb, 2010). Sum scores are produced for 9 separate subscales. Each subscale score can range from 11-44, with 44 indicating the highest possible expression. As previously mentioned, the 9 subscales are Aesthetic, Negativistic, Humanistic, Naturalistic, Symbolic, Scientific, Utilitarian, Dominionistic, and Moralistic.

Results

Change in KSBIV Scores

Means and standard deviations for pre and post KSBVI subscale scores are presented in Table 1.

Table 1. Means and standard deviations of KSBVI pre and post subscale scores.

Subscale	Pre		Post	
	Mean	SD	Mean	SD
Aesthetic	31.72	2.93	31.67	3.37
Negativistic	27.24	3.18	24.55	2.95
Humanistic	29.72	3.41	30.45	3.24
Naturalistic	34.09	4.03	36.00	3.88
Symbolic	20.44	2.74	20.92	3.11
Scientific	28.17	3.71	29.05	4.36
Utilitarian	25.97	3.98	24.61	3.90
Dominionistic	26.92	3.95	25.17	3.54
Moralistic	35.84	3.58	37.96	3.95

A repeated measure MANOVA was conducted to assess change in participants' pre and post responses to the 9 KSBVI subscales. Results indicate that there were significant changes in the Negativistic, $F(1,37) = 51.11, p < .001$; Naturalistic, $F(1,37) = 15.02, p < .001$; Utilitarian, $F(1,37) = 6.89, p = .013$, Dominionistic, $F(1,37) = 11.35, p = .002$; and Moralistic, $F(1,37) = 12.80, p = .001$ subscales. Scores decreased on the Negativistic, Utilitarian, and Dominionistic subscales, and scores increased on the Naturalistic and Moralistic subscales. There were nonsignificant changes in the Aesthetic, $F(1,37) = .012, p = .91$; Humanistic, $F(1,37) = 1.67, p = .205$; Symbolic, $F(1,37) = 1.26, p = .268$; Scientific, $F(1,37) = 2.48, p = .124$ subscales.

Moderation Analyses

To better understand the factors that influence changes in KSBVI scores over time, several variables were assessed as moderators of change: gender, prior camp attendance, prior wilderness program participation, and semester of attendance at the Outdoor Academy. In addition, a series of ANCOVA models were run to examine potential differences between groups (gender, camp, wilderness program, semester) using pre scores as covariates.

Discussion

These results are consistent with findings from a recent study utilizing the KSBVI with incoming college students (Meltzer et al., 2013; 2014). The Negativistic, Naturalistic, Utilitarian, Dominionistic, and Moralistic subscales scores changed significantly over time indicating that participation in the Outdoor Academy had an impact of the students' biophilic expressions. These changes were also in the same direction as shown previously (Meltzer et al., 2013). Interestingly, the Domionistic subscale was previously shown to have no significant change (Meltzer et al., 2013), and in the current study there were no significant changes in the Aesthetic, Humanistic, Symbolic or Scientific subscales. The theory of biophilia could serve as a lens through which to understand outdoor program participants' relationships with the natural world and the KSBVI could serve as a means of assessing change in these relationships over the duration of a program. The researchers recommend additional studies investigating the impact of curriculum components on change in one's biophilic expression. Finally, continued use of the KSBVI within AE programming and in similar semester boarding school programs may deepen our understanding of the influence of such programming on the human-nature relationship.

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Characterizing Student Motivations in Outdoor Recreation Program Activity Offerings

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Background

University Outdoor Recreation Programs (ORP) strive for student outcomes in the areas of student leadership development, environmental stewardship, and physical activity and health; and have proven to be influential for social development, trust augmentation, and perception of control (Sibthorp & Jostad, 2014; Davidson, Ewert, Chang, 2009). Research has shown that motivation to participate in ORPs comes in a variety of forms. Participants can be motivated for reasons such as search for autonomy, challenge, psychological need satisfaction (Deci and Ryan, 1991; Ryan & Deci, 2000), or have developed attachment to the activity itself (Alexandris, Funk, & Pritchard, 2011). Additionally, participants may be motivated by external forces, such as to fit in with social circles, to get good grades, to earn course credit, or to meet the expectations of those around them (Kleiber, Walker, & Mannell, 2011). Kleiber, et al. (2011) addressed this topic with the question, are the motivational factors that are associated with rock climbing similar to that of white water kayaking or mountain biking? The purpose of this study was to explore motivational factors associated with varying ORP activities.

One approach that ORPs employ to achieve desired student outcomes especially in the area of leadership development is by giving students responsibilities within these programs through positions as trip leaders, climbing wall belay instructors, or challenge course facilitators. This study also sought to address differences in motivations between student trip leaders and participant students. Several studies have shown that one must experience a specific outdoor activity in order to develop a motivation towards continued participation in that activity (Lyng & Snow, 1986; Ewert & Hollenhorst, 1989; Manning, 2011; Buckley, 2012). This study explored the differences in motivation between these two groups in greater detail.

Results may be helpful as administrators design courses that fit student interests. Having a wide variety of activities may result in increased student participation, however many administrators are working to simplify program offerings for financial, personal, and safety reasons. These results may allow administrators to pick specific motivational factors and choose outdoor activities that best suit the geographic or regional area where the program is located and functions; minimizing travel costs and risk and maximizing instructive or interactive time.

Methodology

This study employed the use of the Leisure Motivation Scale (LMS; Beggs, Stitt, & Elkins, 2004; Murray & Nakajima, 1999), a reliable survey instrument consisting of 48 items using a five-point Likert scale, ranging from (1) never true to (5) always true. The LMS has four factors, including *intellectual*, *social*, *mastery/competence*, and *stimulus avoidance* motivations.

A total of 256 students participated in the study. The subjects were purposefully selected due to their participation in an ORP course at a university in the Midwest. This program was selected because of the wide variety of outdoor recreation activity types that it offers. The selection criteria include (a) students of the university, and (b) signed up for an outdoor adventure trip or for-credit course through the university ORP as a participant or undergraduate trip leader. Subjects completed the LMS and a subject demographic information sheet prior to interaction with instructors or course content.

Results

One-Way Analysis of Variance (ANOVA) was performed to examine differences in LMS factors between outdoor activity courses. There was a significant difference in intellectual motivation factors among ten ORP activity courses, $F(9, 241) = 2.658, p = .006$. Post-hoc comparisons using the Tukey HSD test indicated that mountain biking ($M = 3.60, SD = .81, p = .034$), was significantly different from foundations of adventure ($M = 4.23, SD = .60, p = .034$). In addition, there was a significant difference in social motivation factors, $F(9, 237) = 3.936, p = .00$. Post-hoc comparisons using the Tukey HSD test indicated that whitewater kayaking ($M = 3.06, SD = .73, p = .024$), mountain biking ($M = 2.96, SD = .96, p = .004$), backpacking ($M = 3.22, SD = .70, p = .013$), and rock climbing ($M = 2.98, SD = .65, p = .000$) were significantly different from foundations of adventure ($M = 3.79, SD = .67$). The other factors and courses did not have any significant results.

Independent samples t-tests were used to examine whether there is a difference in LMS between student trip leaders ($n = 32$) and student participants ($n = 215$). There was a significant difference in social motivation for trip leaders ($M = 3.90, SD = 0.69$) and participants ($M = 3.21, SD = 0.75$), $t(245) = 4.90, p = .000$. The other three factors (intellectual, competence/mastery, and stimulus avoidance) did not have significant results.

Table 1

Social Motivation Comparison between Trip Leader and Participant Groups

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
Trip Leader	32	3.90	.687	4.902	.000	.96
Participant	215	3.21	.747			

Discussion and Implications

Gilbertson and Ewert (2015) suggest that outdoor programs draw people to socialize around shared interests. The findings reinforce that the social aspect is one of the main motivators for continued participation in ORPs. Therefore, in order to develop a thriving campus ORP administrators should place emphasis on encouraging and fostering positive social experiences and interpersonal connections within their programs. Additionally, this study demonstrated the importance for ORPs to reach students early in their college careers, as motivation means were found to be higher for freshman students in comparison to their upperclassmen counterparts.

This study found that there were significant differences between several courses in terms of intellectual and social motivation, as well as significant differences in social motivation between student trip leaders and student participants. According to the study, motivation was similar for the majority of courses, which would support the idea that diversification of outdoor activities provided by a program is not required in order to encourage participation as students may participate in whatever activity is available with little preference. Gilbertson & Ewert (2015) refute this by suggesting the importance of providing different and new outdoor recreation activities to continue to attract a wider range of participants. Further research is required to better understand the effects that type of course offerings may have on student motivation.

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Parental Motivation toward Youth Summer Camp Enrollment

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Background

Summer camps offer many experiences that positively impact the lives of youth. Youth development outcomes observed by parents include interest in adventure/exploration, independence, making friends, positive identity, peer relationships, and leadership (Henderson, Whitaker, Bialeschki, Scanlin, & Thurber, 2007). The goals of this research were to explore why parents enroll their children in residential camps and to assess the influence of intrinsic vs. extrinsic motivations on enrollment decisions. According to Ryan and Deci's (2000) self-determination theory, extrinsic motivation refers to actions taken for an external reward like praise or recognition, while intrinsic motivation refers to "performing an activity for itself, in order to experience pleasure and satisfaction inherent in the activity" (Guay, Vallerand, & Blanchard, 2000, p. 176). It is expected that a deeper understanding of parental motivations will allow camps to more effectively market their programs and more fully meet customer expectations.

Methods

This study gathered quantitative data using a survey developed by the researchers based on the self-determination theory of motivation (Ryan & Deci, 2000) and on prior research on the outcomes of camp attendance (Bialeschki, Henderson, & James, 2007; Thurber, Scanlin, Scheuler, & Henderson, 2007). Surveys were completed by parents at two residential summer camps offering one-week sessions at a similar cost in the same geographic region. These sites were selected using a purposive sampling method. Parents completed the survey during camper check-in. A total of 82 surveys were collected over the course of seven weeks during summer 2017. Descriptive and inferential statistics were computed using IBM SPSS software to explore the roles of different motivators on parental decisions.

Results

The survey collected information on prior camp attendance, enrollment decision-making, parental motivations, and demographics. If parents had more than one child attending camp, they were asked to choose one and answer all questions in relation to that child. The average age of campers in this study was 11.2 years. The majority (56.1%) had attended an overnight camp before. Similarly, 73.2% of parents who completed the survey attended overnight camp themselves as children. In this study, 86.5% of parents were married or in domestic partnerships, and 91.5% were employed.

Parents were asked to indicate who made the decision to enroll the child in camp, an adult family member or the child. The respondents were instructed to place an "x" on a line to represent their situation. The far left end of the response line (0) represented that the parents fully made the decision for enrollment. As you follow the line towards the value of (1), the response for the enrollment decision was made more by the child. The average response was 0.45, indicating a stronger parental influence. Child influence was higher for families where the child had attended camp before ($M=0.52$, $SD=0.35$) than for first-time campers ($M=0.36$, $SD=0.36$), but the difference was not significant based on an independent samples t-test ($t(77)=1.93$, $p=0.057$).

Parental motivation was explored using two series of statements with five-point Likert-scales (1=strongly disagree to 5=strongly agree). As can be seen in Table 1, the first series focused on the influence of family traditions, registration cost, anticipated camper growth and development, camp activities, and provision of childcare. The highest agreement was with “I enroll my child because they enjoy activities at camp.” The statement that was least agreed with was “because camp is an alternate form of childcare this week.”

Table 1. Influences on Enrollment

Statement (I enrolled my child in camp...)	Mean
Because camp is an alternate form of childcare this week.	1.54
So that I can complete tasks.	1.70
Because I was offered help financially to send them.	2.19
Because everyone in my family goes to camp as children.	2.85
To learn different cultural traditions.	3.28
Because it is affordable.	3.57
To get them to spend more time outside.	3.88
Because of an activity this camp offers.	4.17
Because they love the outdoors.	4.22
To help them gain social skills in real life situations.	4.24
Because they enjoy activities at camp.	4.46

Note. Possible responses were 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. A higher mean indicates higher agreement with the statement.

Table 2. Enrollment Motivators

Statement (Intrinsic Motivation)	Mean	Statement (Extrinsic Motivation)	Mean
I am interested in what camps do for children.	4.12	I feel pressure to enroll my child from other parents.	1.28
Summer camp has similar values to mine.	4.23	I would feel guilty if I didn't enroll my child.	1.52
I believe in the value/mission of summer camp.	4.28	I feel pressure to enroll my child from my child.	2.22
I enrolled my child for the quality of learning during camp.	4.39	I feel that I am supposed to enroll my child in activities during the summer.	2.70
I enjoy hearing about my child's experiences and knowing that they are having fun.	4.84		

Note. Possible responses were 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. A higher mean indicates higher agreement with the statement.

A second series of statements investigated whether parents were more motivated by intrinsic factors (i.e. youth development or enjoyment) or by extrinsic factors (i.e. pressure and guilt). The same Likert scale of 1=strongly disagree to 5=strongly agree was used. See Table 2. Statements were written based on self-determination theory and the sub theory of organismic integration theory (Ryan & Deci, 2000) to reflect those categories and parents' attitudes. A Chronbach's alpha test revealed high reliability for intrinsic statements ($\alpha=0.77$) and lower reliability for extrinsic statements ($\alpha=0.55$). Responses to intrinsic motivation statements and extrinsic motivation statements were averaged, thus creating two new variables that could be compared. A paired t-test of the agreement with intrinsic motivations statements ($M=4.37$,

$SD=.50$) and extrinsic motivation statements ($M=1.93$, $SD=0.63$) revealed a significant difference ($t(80)=26.40$, $p=.000$). Plotting the level of agreement with intrinsic motivation statements against the level of agreement with extrinsic motivation statements revealed that parents fell into two groups: those motivated by intrinsic factors only and those motivated by both intrinsic and extrinsic factors.

Discussion

The highest response to the statement “I enrolled my child in camp...” was “because they enjoy activities at camp.” This means that the planned camp activities are among the highest motivators. In camp brochures and advertisements, it is common to see a list of activities, among other information, that a camp provides. With different camps readily available, parents can choose between many activities that their children enjoy.

With a mean response of 4.24 (with 5.00 representing strongly agree), parents also chose to enroll their children in a camp to gain social skills in real life situations. Social skills are emphasized in many summer camp programs and represent one of many summer camp outcomes. A previous study about positive youth development concluded that “emphasis on developmental outcomes of camp experiences and the specific settings, structures, and programs and activities that foster positive youth development has been important and productive” (Garst, Browne, & Bialeschki, 2011, p. 83). Parents observed such growth in their children as a result of camp attendance (Henderson, Whitaker, Bialeschki, Scanlin, & Thurber, 2007).

In terms of motivation, the two highest responses were that parents enjoy hearing about their child’s experience and value quality learning at camp. These results suggest that camps should continue highlighting outcomes and activities in marketing materials. Parents are sending their children to camp to learn and grow through the experience.

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Investigating Inclusive Praxis among Outward Bound Instructors

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Background

The purpose of this study was to explore inclusive praxis among Outward Bound (OB) instructors. If outdoor adventure education (OAE) programming is to remain relevant amidst changing U.S demographics, the industry must more fully embrace inclusive practice as it strives to serve an increasingly diverse population of students (Bobilya, Holman, Lindley, McAvoy, 2010; Warren, 2002; Warren, Roberts, Breunig, & Alvarez, 2014). Within the OAE field, inclusive practice refers to intentional practices used to create meaningful and equitable experiences for all students, regardless of individual background (Breunig, 2005; Dillenschneider, 2007; Frazer, 2009; Warren, 2005). Inclusive practice is aimed at including individuals from under-represented racial and ethnic backgrounds, as well as individuals with disabilities (Dillenschneider, 2007; Warren, 2005). Warren et al. (2014) call for an evolution of inclusive practice within the industry to provide more equitable and inclusive programming for individuals across social class, gender, sexual orientation, religion, and other identities. Inclusive practice is intended to promote social justice, which is a traditional aim of many OAE organizations and programs.

Current OAE literature identifies instructors as an integral component of student experiences and outcomes (Sibthorp, Furman, Paisley, Gookin, & Schumann, 2011; Sibthorp & Jostad, 2014). As such, the role of instructors in promoting social justice through inclusive practice deserves scrutiny. Such an investigation has the potential to enhance our understanding of inclusive practices in outdoor adventure education and thus better position the field to promote social justice through these practices. To that end, this study explored the efforts of a select group of OB instructors to incorporate inclusive practices into their work. The study focused on Outward Bound, because of the organization's historical commitment to principles of social justice (Itin, 1999; Martin, Breunig, Wagstaff, & Goldenberg, 2017; Miner & Boldt, 1981; Rose & Paisley, 2012). Our investigation of inclusive *praxis* among OB instructors allowed the researchers to critically assess the extent to which instructors practiced a core value of the organization.

Methods

This study was part of a larger research project designed to examine Outward Bound instructors' intentions to use inclusive practices on their courses as well as the factors that influenced them to do so. This presentation will report on the qualitative data collected through this study. Qualitative data were collected via two distinct methods: 1) open-ended survey questions, and 2) semi-structured interviews with a select group of survey participants. Purposive, convenience sampling was used to distribute surveys via paper-pencil and online formats to 600 Outward Bound instructors in the United States. A total of 136 instructors participated in first phase of data collection, yielding a response rate of 23 percent. Ten interviewees were selected from the broader sample of survey participants using purposive convenience sampling techniques.

The open-ended survey questions included the following: 1) *What are common inclusive practices you have used while instructing courses for Outward Bound?* 2) *Of the practices you identified above, which of these are the easiest for you to implement? Which are the most*

challenging? Why? 3) [P]lease define diversity in your own words. Interview questions were developed based on themes that emerged through the analysis of data collected through these survey questions. Interview questions sought to understand instructors' use of inclusive practices through their work with OB. All interviews were recorded and transcribed resulting in 173 pages of transcripts. Analysis of the interviews was conducted through an inductive approach, using open coding and a constant-comparative method to identify salient themes in the data (Merriam, 2009). Member checking of transcripts, multiple data sources, and the primary researcher's positioning as an Outward Bound instructor help to ensure credibility of the study and findings.

Findings

Analysis of the survey and interview data revealed several emergent themes regarding inclusive praxis. Themes emerging from the survey data included: *the use of intentional curriculum and course structures, facilitated activities, personal sharing, specific language usage, and the importance of fostering a positive group culture*. Review of the interview data suggested that Outward Bound instructors promote inclusion on course through the creation of spaces that focus on *open conversations, creating connections, establishing a common ground, and that promote freedom of expression*. Additionally, the data presented indicators of inclusive practice competency and unique barriers to the use of inclusive practices. Furthermore, interview data suggested the existence of distinct factors that influenced instructors' inclusive praxis. These findings suggest that the importance of specific instructor backgrounds and characteristics, peer and organizational values, and the efficacy of inclusive practices significantly impacted the inclusive praxis of Outward Bound instructors.

Discussion

The purpose of the study was to explore inclusive praxis among Outward Bound instructors and examined instructor motivations for incorporating inclusive practices into their work as OB instructors as well as the factors that influenced the extent to which they did so. The findings from this study help provide a more comprehensive understanding of current inclusive praxis of Outward Bound instructors. In addition, the findings from this study indicate that the inclusive praxis of Outward Bound instructors closely aligns with practices identifiable in the literature of related fields such as classroom education (Chita-Tegmark, Gravel, Serpa, Domingos, & Rose, 2012; Pearson, 2015). Furthermore, the findings of this study reveal that the current inclusive praxis of Outward Bound instructors is heavily predicated by individual attitudes, organizational and peer factors, and efficacy and control over use of inclusive practices. While an inductive approach was used to analyze data, the findings closely align with Ajzen's (1991) theory of planned behavior, further supporting the importance of individual attitudes, organizational values and creating a cogent argument for continued robust diversity, equity, and inclusion training. Furthermore, the results of this study may aid in further defining inclusion and better positioning the concept within the OAE context. Although the findings from this study may elicit useful explanations, further exploration of inclusive praxis across the industry is needed to keep outdoor adventure education relevant.

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The Effectiveness of Outdoor Behavioral Healthcare on Adolescents with Mental Health Issues

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Adolescent mental health is a significant societal concern with 10-20% of adolescents meeting criteria for a diagnosable mental disorder (Kieling et al. 2011). If left untreated or under-treated, adolescent mental health disorders can lead to adult mental health issues and chronic health concerns later in life, including premature mortality (Brown et al, 2009). Outdoor Behavioral Healthcare (OBH), often referred to as wilderness therapy, is growing as an effective therapeutic intervention for adolescents struggling with emotional, behavioral, relational, and substance use disorders (Norton, Tucker, Russell, Bettmann, Gass, Gillis, & Behrens, 2014). Despite the longevity of practice and numerous effectiveness studies, a significant limitation identified in the literature is the lack of a comparison group in the published research (Tucker et al., 2016). The purpose of this study was designed to fill the research gap by comparing treatment in an OBH program to a treatment as usual (TAU) group.

Sample

The sample included 60 participants in the comparison group and 147 participants in the treatment group between the ages of 13 and 17 years of age. The comparison group included participants who inquired into treatment at this OBH program, yet decided to seek treatment within the community. Those in the treatment group are those who enrolled for treatment at this OBH program. Participants in the comparison group received “treatment as usual” (TAU), which consisted of seeking services in their communities. Specifically, of the 60 participants in the comparison group, 62% (N=37) received outpatient counseling, 20% (N=12) received psychiatric care, and 51% (N=31) received medication management services.

In both the treatment and comparison groups, most of the clients were male 66.7% in the treatment group and 63.3% in the comparison group. Clients were primarily Caucasian, 89.4% in the treatment group and 76.7% in the comparison group. Chi-square analyses revealed no significant differences between the groups in terms of gender and race. The average age of the treatment group was 16.4 (*sd* = 1.12) and the average age of the comparison group was 15.0 (*sd* = 1.35). An independent samples t-test did reveal that the treatment groups was significantly older than the comparison group, $t(205) = 7.65, p < .001$. The average length of treatment at the OBH program was 80.5 days.

Instrumentation

Data for this study were gathered at an AEE OBHC accredited program. Mental health was assessed using the Y-OQ 2.01. The Y-OQ 2.01 is a global measure of adolescent functioning. It is designed as a measure of treatment progress for children and adolescents receiving psychological treatment. The instrument measures overall client functioning that includes the following six subscales: (a) Intrapersonal Distress, (b) Somatic Symptoms, (c) Interpersonal Relationships, (d) Social Problems, (e) Behavioral Dysfunction, and (f) Critical Items. It is a 64-item parent/guardian report assessment designed for youth aged 4 to 17 years (Burlingame et al, 2001). This study only used the total score, which combined all of the subscales into one overall measure of psychological functioning.

The instrument possesses a high internal consistency ($\alpha = .94$), suggesting a strong single factor underlying the six subscales. The reliability of the subscales ranged from .51 to .90. Test-

retest reliability produced an average coefficient of .83. No interrater reliability was described in the study.

At the time of intake or inquiry, a one way ANOVA revealed that there were no significant differences between the Y-OQ means of the OBH group ($M = 102.2, sd = 28.1$) and the comparison group ($M = 106.9, sd = 31.6$), Welch's $F(1, 99.11) = .973, p = .326$. This suggests that according to their parents/guardians both groups of youth were functioning at similar levels of dysfunction, well above the clinical cut-off of 46 for normalized behaviors at intake or time of inquiry.

Procedures

The study used a non-equivalent group, pre-test post-test research design to answer the research question (Rubin & Babbie, 2016). For the treatment group, the Y-OQ 2.01 was administered to parents and/or guardians at admission to the OBH treatment program (Time 1). A follow-up Y-OQ 2.01 was administered approximately one-year after clients completed treatment (Time 2). On average this was 15.0 months after the initial Y-OQ 2.01. For the comparison (TAU) group, parents of participants completed a Y-OQ 2.01 when they inquired into treatment at this OBH program (Time 1). Parents and/or guardians were later contacted both via email and personally by phone and invited to complete a second Y-OQ 2.01 (Time 2). On average parents in the comparison group were contacted 17.2 months after they completed their initial Y-OQ 2.01. Of those who agreed to participate in the comparison group, 105 parents/guardians (48.8%) completed an admission and post-treatment Y-OQ 2.01. Of the 105 completed data sets, 60 met the criteria for inclusion in this study or 27.9% of those who agreed to participate. Participants were excluded from the study if their youth received treatment in an alternative OBH or residential treatment program and if they fell outside the age range treated at this OBH program (12-17 years of age). For this study data were stored on a HIPPA compliant database, and identifying information was removed to ensure participant confidentiality. This study was approved by the Institutional Review Board (IRB) at the author's institution.

Results

A 2 x 2 repeated measures ANOVA was conducted looking at the main effects of Time [Time 1/Time 2] and Group (OBH/TAU). These statistics revealed significant main effects for Time [$F(1) = 166.782, p < .001, partial \eta^2 = .449$] and Group [$F(1) = 26.821, p < .001, partial \eta^2 = .116$]. The OBH group had significantly larger improvements than the TAU Group, with a mean Y-OQ score of 46.9 ($sd = 35.0$) at Time 2 compared to a mean of 86.92 ($sd = 45.1$) for the TAU group. Youth scores for the OBH group decreased on par with the clinical cut-off of 46, with parents reporting their functioning like that of a normative, non-clinical sample. In addition, changes were greater than 13 points, noting the changes represented clinically significant levels of change. For the comparison group who remained in their community for treatment their parents still reported high levels of acuity. It is important to note that youth in the OBH group had mean improvements on the Y-OQ as reported by parents that were 2 ½ times larger than those for the comparison group (OBH Mean improvements = 55.33; Comparison group mean improvement = 19.95).

Discussion

The findings from this study add to the growing body of empirical literature on OBH treatment effectiveness. Like past research findings on OBH effectiveness (Tucker, Combs et al,

2016) the current study found significant overall improvements for youth one-year post treatment (Time 2). This further supports the treatment outcome results found in related studies that do not use a comparison group, as well as breaks new ground for demonstrating OBH effectiveness when compared to a treatment as usual group.

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Examining Long-term Transfer between Socioeconomically Differentiated Students in Outdoor Adventure Education

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Outdoor adventure education (OAE) programs, such as the National Outdoor Leadership School (NOLS), Outward Bound, and others, have consistently diversified their student populations through the use of scholarships. The intent has been twofold: to increase access for diverse populations in a predominantly affluent, white field (Gress & Hall, 2017; Warren, Roberts, Breuing, & Alvarez, 2014), and to use outdoor adventure education as part of programs for students from low socioeconomic status (SES) to develop skills linked to career and college readiness (Bergin, Cooks, & Bergin, 2007; Dyce, Albold, & Long, 2013; Richmond, Sibthorp, Gookin, Annarella & Ferri, 2017). As SES is correlated with race, offering scholarships has diversified the student body in OAE both socioeconomically and demographically.

Historically, the majority of OAE research has been conducted on white students from higher SES. Studies focused on learning outcomes show that these students retain a variety of skills, categories of which include leadership, self-concept, academic, intra- and interpersonal skills, and outdoor living skills (Hattie et al, 1997). Some of what they learn proves more useful or transferrable over time than other aspects. For most students rolling a kayak, for example, has less utility than learning to function under difficult circumstances (Sibthorp, Furman, Paisley, & Gookin, 2008). An important but unknown question revolves around whether students from low SES have the same learning outcomes, and how they transfer those skills to their lives.

While research on minority groups in OAE is limited, research in the educational literature has long demonstrated that learning outcomes vary by population. The Coleman Report (1966) was one of the first studies to show that students from low SES fared worse based on standardized measures in the public education system. Despite changes in education over the past fifty years, SES continues to be correlated with educational outcomes. For example, low SES students are underrepresented in higher education, and if they do attend college, they deal with unique challenges (e.g., being unable to depend on a familial support system to coach them through college) that lead to lower graduation rates. SES is also linked to different cultural practices, such as whether a student is employed while in school (more likely for low SES) or join school-supported clubs (more likely for higher SES) (Walpole, 2003). It therefore seems possible that SES could affect learning outcomes or transfer in OAE.

Thus, the purpose of this qualitative study was to understand how learning varies for OAE students from different socioeconomic backgrounds. In particular, we focused on whether learning outcomes and learning transfer differed by scholarship status.

Methods

We obtained a purposive sample by emailing all students who met the inclusion criteria of (a) having attended a NOLS course between 2010 and 2012, and (b) having enrolled on an open-enrollment course through a Gateway Scholarship partner organization. Scholarship status acted as a proxy for SES. After recruiting 11 students who received scholarships, we matched them with 11 students on their course who enrolled without financial assistance. Half were male, and half female. Ages at time of attendance ranged from 15 to 51 (median = 17.5). Students with low SES identified as black (2), Hispanic (1), multi-racial (6), white (1) and other (1); students

with high SES identified as white (8) and other (3). Course skill types varied from backpacking and sea-kayaking to horse-packing, and lasted 16 to 30 days.

Semi-structured interviews occurred by telephone between November 2016 and October 2017. The interviewer used an interview guide with questions focused on how the NOLS experience impacted the participant, what they learned overall, what they learned that currently remains valuable to them, and how NOLS affected their college or career path. Interviews were transcribed, and analyzed using open, closed and axial coding.

Preliminary Results & Discussion

While students in both socioeconomic groups reported similar learning outcomes, their application and significance varied. All students reported having learned outdoor skills, but students with lower socioeconomic status more commonly noted that their NOLS course was the only opportunity they had to learn or apply these skills. Students called the course diverse, but definitions of diversity varied. Those who were racial minorities were more likely to comment on race and socioeconomic status whereas open enrollment students noted cultural differences related to politics or religion.

All students said they learned interpersonal skills, such as teamwork, communication, conflict resolution and getting along with people who had different cultural upbringings. Interpersonal skills generally proved highly transferable, but their application varied by group. Students with low SES more commonly discussed how the course showed them they could build connections with others based on racial or socio-economic differences (*“It [NOLS] definitely allowed me to get some more insight. Get a little bit more knowledge. Then I went to college, and it was a predominantly white school, so that was definitely a good transition into ... the kind of people that I was going to be around in college”*) while students with high SES discussed how to find common ground with people whose values differed (*“Probably the biggest challenge is just working with people that ... in a natural situation, would not have been my friends necessarily. So, learning how to live with them regardless of the fact that I didn’t necessarily share all their values”*).

Students with high SES focused more on the maturity they developed. One student said after NOLS, he was more likely to carry groceries in for his mother, and seek opportunities to help people. Conversely, students in the low SES group more commonly connected their NOLS experience to college, explaining how they learned how to make plans to accomplish goals and see them to completion on course. The on-course experience often focused on completing a difficult hike. But they saw how developing those skills in the backcountry translated into completing papers for class, which also required breaking the larger goal into smaller tasks and staying present with each step to achieve the end goal. Students with higher SES referenced similar learning, but it seemed less acutely connected to academic or professional achievement. However, these differences could be a function of the sample. The students who received scholarships were almost always nominated or in some way pre-selected because of their aptitude in other domains, such as in school. The students in the open enrollment group typically enrolled at NOLS based on a familial recommendation.

Whereas in the traditional classroom, lower SES is associated with worse learning outcomes, this did not appear to be the case for students in this study. Regardless of SES, students thought they had gained significant learning that they found impactful. Several factors could explain why. Because students who receive scholarships are often selected for their academic aptitude, these students have already shown that they perform well despite potentially

challenging circumstances they navigate at home. In addition, once on course, OAE students get no outside resources or help. They live communally, and share the same equipment, such as tents, maps, and cook sets. SES consequently does not affect access to resources or familial support. As previously described, the two student groups did differ, but differences were more a function of context than content.

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Beyond Inclusion: Outdoor Experiential Education as Whiteness Education

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Introduction

“I believe that *all* education proceeds by the participation of the individual in the social consciousness of the race,” reads the first line of Dewey’s *Pedagogic Creed* (1896, emphasis added). All education, Dewey points out, necessarily is also a process of cultural socialization into historically conditioned forms of thought. Given the century of social research since Dewey penned his *Creed* (to say nothing of current politics), this insight needs an update: all education is conditioned by and for the controlling class, and—certainly in the United States—is thus organized within the regime of whiteness (Leonardo, 2002). The cultural-historical dimensions of Dewey’s philosophy were omitted from outdoor experiential education (OEE) theorizing as psychologized expressions of experiential learning rose to prominence in the late 20th century (Fenwick, 2001; Seaman & Nelsen, 2011). One consequence of this shift has been to conceive of learning outcomes in individualistic terms (see Hattie, Marsh, Neill, & Richards, 1997) instead of scrutinizing the kinds of “social consciousness” that are inevitably emphasized in OEE.

In this paper, we propose that whiteness is the consciousness into which OEE participants are tacitly socialized (Vernon, 2015a); it is, in other words, a form of whiteness education. Whiteness education is a regime of life-making wherein practices uncritically “produce and reproduce white supremacy and privilege...[by socializing into] the frames of truth and conceptions of the ‘good’...[that] appear to be common and value-neutral...and go unnoticed for those who benefit from it.” (Applebaum, 2016, p. 2). Framing OEE as whiteness education contextualizes why problems with diversification persist across outdoor fields despite repeated attempts to be more demographically inclusive (e.g., Outdoor Foundation, 2016; Warren, Roberts, Breunig & Alvarez, 2014). Seeing OEE as branch of whiteness education extends criticism of paternalistic appeals for inclusion into existing practices (Warren, 2012), and recognition of various kinds of privilege as economic, gender, and geographic categories that should somehow be dismantled (Rose & Paisley, 2012). These approaches tend to focus attention on what and whom are *left out* of OEE. Seeing OEE *as* whiteness education raises questions about what and whom, if unintentionally, are actively being *promoted*. The former methods of analysis lead naturally to calls to incorporate diversity and social justice more centrally while suggesting that a value-neutral core exists to be preserved; the latter questions the ability for core ideas and practices to ever be diverse and socially just, as their history emerged from and still appears committed to normatively white spaces of narrative, reason, and action (Vernon, 2015b). The approach we are proposing suggests that diversity in OEE is unlikely to be realized by redoubling efforts at inclusion in marketing and enrollment, but requires decolonization and diverse recoordination of its aims, ideas, and practices.

Outdoor Experiential Education *is* Whiteness Education

Scholarship on whiteness draws on both the social sciences and humanities (e.g., Povinelli, 2011; Leonardo, 2002). The humanities are especially relevant here, since the influence on contemporary OEE of American Romanticism, and hence its racist legacy, cannot be overstated (Roberts, 2012; Savoy, 2015); OEE is literally inconceivable without white narratives of adventure and Transcendental representations of nature (and the non-white humans inhabiting it) as basic archetypes (Bacon, 1983; Hutchinson, 2015; Noyce, 1958). The humanities thus forces

scholars to acknowledge that the motifs of conquest and sublime nature—whose reenactment in OEE become introjected as contours of the self—depends on the erasure or dispossession of Indigenous and African-Americans from the landscape, from history, and from agency so experience can be modeled after white memory (see Dungy, 2009; Savoy, 2015). Maintaining the fiction of sublime nature as neutral and innocent thus makes it possible to ignore or minimize OEE’s active contribution to a persistent racial order.

As a progressive reform, OEE advocates originally professed to exemplify nontraditional educational practices, but did so within the larger colonial and capitalistic enterprise; for instance, heterosexual masculinity and aristocratic politics were deeply woven into Hahn’s rationales (Hahn, 1934; see also Freeman, 2010; Lynch & Moore, 2004; Vernon, 2015b). Archetypally, adventure expeditions “impose the spatial order and practices of European settlement,” producing “‘white’ spaces, first cartographically, then racially” (Iverson, 2000, p.1); and as education, we add, “psychically.” These abiding characteristics were further occluded as OEE was established in the US and incorporated ideas and practices from humanistic psychology focused on the self. Not only as physical conditions, then, but also in practice, OEE pedagogies endorse and ‘experientially’ teach the normative attributes associated with white exceptionality, especially the semiotic reliance on sublime nature to venerate a self divested from collective social life (see Vitz, 1995). Rose and Paisley (2012) thus rightly implicate “teaching various aspects of character development, leadership...or communicative interpersonal skills” (p. 138) as core to the “whiteness...in experiential education” (p. 142). Because of such deep and abiding commitments to whiteness, the OEE field must undertake the diverse work of decolonizing itself (Leonardo & Porter, 2010) before it can be remade as diverse education.

Changing the Shape of OEE

Our analyses integrate and expand on previous arguments in the OEE literature (e.g., Fox, 1992) by incorporating them into a historical analysis of longstanding OEE ideas and practices. We also note that solutions such as expressing greater tolerance, stressing inclusivity, or removing barriers to access will likely fall short without realigning and reconstructing OEE within a space of diverse publicness that shares a greater concern for historical representation and educational equity in much broader, yet also more specific, terms. Importantly, we are not arguing that all practices should be abandoned (if such a thing were possible), but rather stress the need to openly and uncomfortably explore how they can be reconstituted to serve the cultural projects of diverse communities. As examples, we point to *Outdoor Afro* and *OUT There Adventures* as motifs, forms of participation, epistemologies, and purposes different from those that have been canonized in OEE literature and programs. Imagining new coalitions comprised of an increasingly diverse community will require new practices and new ways of viewing old practices; only then can new forms of social consciousness emerge.

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Closing the Loop: A Multi-Year Study of How to Measure Change

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Increased attention has been focused on the need for evidence-based research and evaluation in outdoor and adventure programs. Outward Bound USA recently designed and implemented an outcomes instrument linked to its educational framework. The Outward Bound Outcomes Instrument (OBOI) was initially field-tested (Ewert & Frankel, 2009) and Luo (2011) established construct validity and outcome model validation measuring the following three factors: Character Development, Leadership, and Environmental Service. The North Carolina Outward Bound School (NCOBS) adapted the OBOI to match its educational outcomes and created the NCOBS Course Impression Survey (NCOBSCIS). A psychometric analysis demonstrated that the NCOBSCIS was a valid and reliable measure (Faircloth & Bobilya, 2013; Faircloth, Bobilya & Ewert, 2016). Initially, differences in participants' perceptions of their own Character Development, Leadership, and Environmental Service prior to and immediately following participation in a NCOBS course were reported in a *retrospective* pre-test format (Bobilya, Faircloth, & Montgomery, 2013). This initial study reported significant improvement in all three factors. Interestingly, NCOBSCIS data from subsequent waves of analyses show that regardless of how you choose to count change (i.e., true pre or retro pre), Character Development is a significant outcome (Bobilya et al., 2013; Faircloth & Bobilya, 2016; Faircloth, Bobilya, & Montgomery, 2014). Collectively, these findings continue to raise questions regarding the most appropriate way to assess change in outdoor and adventure programs. In other words, there is no guarantee that counting program change using these methods will provide the same result.

Response-shift bias is often a concern when using pre/post self-report measures and frequently researchers rely on retrospective pretests to reduce this (Howard et al., 1979; Sibthorp, Paisley, Gookin, & Ward, 2007). However, when compared to true pre/post methods, retrospective pretests can produce inflated effect sizes (Taylor, Russ, & Taylor, 2008). It is crucial that researchers approach the study of change empirically by comparing pre, post, and retrospective pre data (Howard, Millham, Slaten, & O'Donnell, 1981) in order to make informed decisions about how to measure change (Howard, et al., 1979, 1981). To our knowledge, retrospective pre and true pre data have not been collected within the same study in outdoor and adventure programming. Faircloth & Bobilya (2016) followed recommendations from Howard et al. (1979) to conduct a small scale ($n=5$) exploratory study to make these comparisons which justified the need to replicate this methodology using a larger sample. Therefore, the purpose of this final study in a multi-year instrument development and implementation process was to follow Howard et al.'s (1979) recommendation to collect pre, post and retrospective pre data in the same study to assess which form(s) of bias is present in the data. A second purpose was to replicate the previous pre-post NCOBSCIS studies to compare findings with three previous waves of data.

Methods

The sample was drawn from NCOBS participants who completed an open-enrollment wilderness course of four days or longer during June – August, 2016, provided consent and completed the retrospective pre and true pre, along with the posttest ($n = 215$). Participants completed the true pre-survey prior to arriving and the retro pre/post-survey on the last day of their course. The NCOBSCIS is a 20-item measure using a 7-point Likert scale to rate the degree of agreement with each statement. The measure can be scored to generate 3 separate factor

scores for Character Development, Leadership, and Environmental Service, with higher scores indicating stronger agreement with the survey outcomes (Faircloth & Bobilya, 2013). Five comparisons were made between the retrospective pre, true pre, and post data of the 215 participants who completed all survey questions, following the recommendations of Howard et al., 1979: 1) Comparison of mean pretest scores, 2) Comparison of mean posttest-pretest difference scores, 3) Comparison of mean posttest-retrospective pre-test difference scores, 4) Comparison of posttest means adjusted by pretest means through ANCOVA, and 5) Comparison of posttest means adjusted by retrospective pretest means through ANCOVA. Similar to the previous studies (Bobilya et al., 2013; Faircloth & Bobilya, 2016; Faircloth et al., 2014) a repeated measures ANOVA was conducted on the entire sample to compare Pre and Post means of the Character Development (CD), Leadership (LS), and Environmental Service (ES) factors.

Results

When comparing pretest scores, results of paired sample *t*-tests reveal significantly higher true pre subscale scores for the Character Development, $t(214) = 7.17, p < .001$; Leadership, $t(214) = 7.96, p < .001$; and Environmental Service, $t = 8.54, p < .001$ when compared to the retro pre scores on the same subscales. Next, posttest and true pre scores were compared. Results of paired sample *t*-tests reveal significantly higher post subscale scores for the Character Development, $t(214) = 8.30, p < .001$; Leadership, $t(214) = 2.98, p = .003$; and Environmental Service, $t = 4.37, p < .001$ when compared to the true pre scores on the same subscales. Likewise, posttest and retrospective pre scores were compared and the results of paired sample *t*-tests reveal significantly higher post subscale scores for the Character Development, $t(214) = 16.26, p < .001$; Leadership, $t(214) = 16.76, p < .001$; and Environmental Service, $t = 16.59, p < .001$ when compared to the retro pre scores on the same subscales. When comparing the posttest scores the results of ANCOVA models reveals that there is no significant difference between posttest subscale scores from participants who completed retro, true and post scores and those who only completed the true pre and post scores. The true pre scores for each subscale accounted for a significant amount of the variance in each model: Character Development, $F(1,284) = 132.50, p < .001$; Leadership $F(1,284) = 79.85, p < .001$; and Environmental Service, $F(1,284) = 168.32, p < .001$. Finally, results of ANCOVA models reveal that there is no significant difference between posttest subscale scores from participants who completed retro, true and post scores and those who only completed the retro pre and post scores. The retro pre scores for each subscale accounted for a significant amount of the variance in each model: Character Development, $F(1,223) = 127.89, p < .001$; Leadership $F(1,223) = 252.39, p < .001$; and Environmental Service, $F(1,223) = 296.89, p < .001$.

Discussion

These findings conclude a multi-year study which adds to the conversation in outdoor and adventure program literature regarding how to best assess change following participation. This methodology and these findings provide a model for other similar programs. The significant differences between retro and true pre scores indicate that true pre scores may consistently provide conservative estimates of change when used in pre/post designs. Likewise, the larger effect sizes produced by significant differences between retro pre and post scores indicate that retrospective pre scores may consistently provide liberal estimates of change in pre/post designs. These results are further indicated by the significant contributions of the two forms of pre test scores to ANOCOVA models when comparing post test scores from participants who completed

only one form of pre survey (at random) to those who completed both forms of pretests. Therefore, it is recommended that NCOBS participants complete both forms of pretest to put bounds around conservative and liberal estimates of change and ensure that both forms of bias are accounted for. One recommendation, consistent with Howard et al. (1979) is to ask participants to self-reflect on why their scores may change from true pre to retro pre. This additional inquiry could provide evidence to confirm a response-shift or retrospective bias.

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Turning 40: Just How ‘Life Changing’ are School Expeditions?

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Review of literature

Evidence of the impact of expeditions in the long term is scarce, despite repeated rhetoric that they are ‘life-changing experiences’. Numerous studies have noted the need to observe the benefits attributed to expedition participation over extended periods of time (e.g.: Daniel, 2003; Stott, Allison, Felter, & Beames, 2015) but empirical studies exploring the influence of expeditions over more than five years after the experience are rare. Notable exceptions are Daniel (2003) and Takano (2010). Much of the work involves reasonably well off young people in non-intact groups for extended periods (Takano, 2010) or intact groups from Universities but no one has studied long term benefits of intact group expeditions for school aged young people and their impact over time. This research contributes to filling this gap, aiming to gain better understanding of what participants attribute to an intact expedition experience 40 years later.

Unlike traditional education, experiential learning views knowledge as an evolving, lifelong process where students recognize what works for them in different contexts (Allison & Von Wald, 2010). The influence of expeditions is usually attributed to two factors. First, expeditions are rich environments where people encounter new situations, face new challenges, and meet new people in the wilderness (Allison & Von Wald, 2010; Takano, 2010). Second, the psychosocial stage that explorers are going through is also crucial, as participants are adolescents/young adults, dealing with questions about motivation, meaning and identity (Allison, Stott, Felter, & Beames, 2011; Takano, 2010).

Method

In order to gain a better understanding of the perceived long-term impact of expeditions on participants, this research utilised a retrospective design, interviewing twelve former participants of three canoe and mountaineering high school expeditions to France and Austria 40 years after the experience. The interviews took place in mid-June 2016 during a reunion organized by the Principal Teacher of Physical Education at the school who organized the expeditions. To interpret the meaning of this type of experience several researchers (Greffrath, Meyer, Du, & Monyeki, 2008; Martin & Leberman, 2005) recommend qualitative methods.

The first phase of this study (before the reunion) was to recall life stories that the participants completed via the Internet. Six general themes were provided as prompts: *Short life story*; *Key life moments*; *Interesting events*; *Funny events*; *CV relevant content*; and *Lasting memory from their own expedition*. All stories were read and data extracted by the researchers into a summary table. The second phase comprised 12 individual interviews with participants identified through the life stories collected during the first phase. The purpose of the interviews was to gain an understanding of what participants attribute to the expedition. A schedule for semi-structured interviews was developed based on reviewed literature (Asfeld & Hvenegarrd, 2013; Chawla, 1998; Daniel, 2003; Gassner, 2006; Takano, 2010) and themes identified within the first phase document analysis. All interviews were recorded and thematic analyses performed. Later the researchers transcribed the main themes by identifying codes and assigning labels (Ayres, 2008).

Results

Twelve themes emerged from data analysis, this paper, presents three: Planning and preparation, Confidence, and Development of Gratefulness and an Ethic of Service. The other identified themes were reports about the short-term impact and participants' anecdotes, and this paper focuses on the long-term impact that the expedition had on participants' lives:

- **Confidence:** Participants reported that the expedition experience gave them confidence and bravery to pursue other challenging things later in life even when fear was present: travelling, doing other expeditions, return to school. For participants, rivers were a metaphor to confront challenges and their expedition experience allowed them to be open to challenges and push their boundaries while having fun.
- **Planning and preparation:** Prior to the expedition there was extensive preparation (e.g. building canoes, fitness and technical skills training in order to canoe rivers). There was also extensive planning regarding campsites and itinerary. Participants perceived that everything was carefully organized, something that stood with them their whole life. Actually, they reported that in order to achieve results, it is necessary to plan, prepare and execute accordingly.
- **Development of Gratefulness and Ethic of Service:** Participants also commented that over time they felt fortunate, since currently these types of expeditions would be extremely difficult to organise due to the extensive bureaucracy in schools. Participants were very grateful for the teachers who invested a lot of work and personal time in running the expeditions. From this, several participants saw the importance of helping the next generation, finding different ways of volunteering and giving back to the community through teaching, coaching, mentoring or being involved in their own children's schools. They reported that they found meaning in volunteering activities and helping to organize events for others.

Discussion

This study differs from many others which have examined the short-term (e.g. Stott and Hall, 2003; Stott, Allison, Von Wald, & Fakunle, 2016) or longer-term impacts of expeditions (e.g. Daniel, 2003; Takano, 2010) in that in many previous studies it was organisations that plan the expedition and recruit the leaders and young participants. Here, the organisation was done within one secondary school and all expedition participants were either pupils or staff from that school. Through the process of collecting and analysing data, there was a strong sense that the participants 'wouldn't have missed the expeditions for the world'. This was a strong formative experience that lay latent in some for many years and thus, seemed to be a highly valued aspect of their education. These findings are consistent with an Aristotelian conception of character as developing through a lifetime of experiences and cyclic reflection (Stonehouse, Allison & Carr, 2011; Tiberius, 2008). Our findings of the long-term impact of expeditions are consistent with the factors that the literature reported in the short-term. Participants experienced an increase in confidence not only just after the expedition but also something that participants' said had influenced their choices later in life. In addition, this research found that 'plan, prepare and execute' was one way to face the new situations and challenges that the expedition experience posed. Participants said that conquering those challenges was linked with the increase in confidence they felt. Building on previous research which points out that adolescence and young adulthood is a period of questioning about one's own identity, meaning and motivation, we found that in the long term that the expedition experience fostered in participants a sense of gratefulness and giving back to younger generations. This research shows that the impact of the

expedition was long lasting even when there have been occasional objections to this in the literature (e.g. Brookes, 2003a; 2003b) but these tend to be based on a narrow conception or cherry picking from other subjects and disciplines (e.g. social psychology). The evidence here indicates that expedition experiences can have considerable impact on individuals' coping mechanisms and agency. Thus, it seems that school expeditions may contribute positively to people's lives in the long term.

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Sense of Place in NOLS Education: A Case Study

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Background

Founded in 1965 by Paul Petzoldt, the NOLS mission is to be the leading source and teacher of wilderness skills and leadership that serve people and the environment (NOLS, 2016). One of the core environmental studies learning objectives at NOLS is for students to develop a “sense of place” by experiencing wilderness and exploring relationships with their surroundings. Sense of place is classically discussed as the emotional bonds that develop between a person and an environment (Tuan, 1977). In the NOLS context, sense of place is defined as the personal relationship students develop with areas travelled while participating on a course (Hutson, 2014).

Conceptual Importance and Rationale

Sense of place is important to NOLS because articulating an environmental ethic and supporting students’ abilities in connecting with the natural world beyond NOLS is a goal of every course. Therefore, helping students develop a personal and positive relationship to wilderness environments during NOLS courses is foundational to the environmental studies curriculum (NOLS, 2016). Research supports NOLS’ ability to improve both the cognitive and emotional aspects of students’ environmental ethics developed during a NOLS experience (Waage, Paisley, & Gookin, 2012). Other research shows place-based sentiments can be linked to longer term pro-environmental behavior (Halpenny, 2010). Waage, Paisley, and Gookin (2012) discuss environmental behavior as a set of nested systems and “believe taking an increasingly ecological approach that considers a wide range of factors while focusing on the ways these systems interact is vital to understanding the various differences in individuals’ environmental ethics and, in turn, how they engage in behavior” (p. 26). Extending from this idea, exploring the diverse ways NOLS students report sense-of-place development may be an important part of understanding environmental ethic and behavior formation.

Purpose and Methods

The purpose of this study was to explore how NOLS course participants report developing a sense of place after completing a course at NOLS Rocky Mountain in Lander, Wyoming. Data were analyzed from over 500 NOLS students who answered the open-ended question: Did NOLS help you develop a personal relationship to the places you visited? If so, how? This study is part of a larger project (see Farrell, 2016) where a 30-item pre-post survey was administered during the summer of 2016 to all NOLS Rocky Mountain students. The current project followed the approaches of two completed NOLS research studies and utilized a qualitative case study design (see Paisley, Furman, Sibthorp, & Gookin, 2008; Waage, Paisley, & Gookin, 2012) and coincided with the following steps. First, the primary researcher and a research assistant read through the responses independently using the constant comparison method to form initial categories in the data through open coding. Next, the primary researcher and assistant discussed initial categories and collaboratively made decisions where disagreements existed. Finally, the initial categories were reviewed and finalized through axial coding combined with an examination for “contrast” (Paisley, et al., 2008, p. 204) to ensure difference exists between categories (Spradley, 1979).

Results

A total of 511 students participated in the study. In answering, “Did NOLS help you develop a personal relationship to the places you visited? If so, how?”, 83 participants (16%) responded “No”, 369 (72%) responded “Yes”, 23 (4.5%) responded with unrelated answers and 36 (7%) offered no response. Of the “Yes” respondents, 26 provided no explanation and 6 provided explanations that were unrelated to the question. This resulted in a total of 337 students (66% of N) who responded affirmatively and provided usable detail. Responses varied from one word to several sentences.

The usable 337 “Yes” responses were placed into 15 categories organized by percentage and interpreted by the researchers as: sensing connectedness and appreciating nature (32%), instructor and curriculum-driven learning mechanisms (12.5%), emerging new perspectives on life and nature (9%), feeling like this place is home (7.5%), special and positive memories generated about this place (6%), practicing and internalizing environmental ethics (6%), experiencing and overcoming challenges (5%), living in a remote and harsh environment (5%), wanting to return to the places travelled (4.5%), feeling competent living in a wilderness setting (4%), spending so much time in the places travelled (3.5%), forming and reinforcing an individual point of view about the environment (1.5%), experiencing something greater than myself (1.5%), feeling a sense of community (1%), and being immersed in the experience without access to technology (< 1%).

A secondary focus of this paper is to elaborate on the specific learning mechanisms linked to sense-of-place development. Participants reported learning mechanisms included environmental studies (“They definitively did. I think just learning about the places we went and why the different things were growing and living there was awesome....Having the knowledge makes a personal relationship easier); developing familiar rituals (“Sleeping, drinking, and relieving myself where we travelled made me feel one with it”); facilitating authentic experiences (“Yes, by making the experiences raw and real rather than sheltered and protective”); facilitating reflection (“Yes, by being guided in reflections, daily readings pertaining to the outdoors and values connected to this, and by allowing for quiet time”); and leading discussions on natural history and indigenous awareness (“NOLS helped me by paying tribute to the people who used to live on the land we hiked on”).

Discussion

Overall, the findings from this study suggest NOLS courses can have a positive impact on the development of sense of place and are consistent with environmental ethics and environmental awareness research related to NOLS (Hutson & Bailey, 2008; Paisley, et al., 2008; Waage, Paisley, & Gookin, 2012). These findings can also help NOLS fine tune the ways it facilitates sense of place. For example, while the affirmative responses appear to be largely the result of general NOLS course structure and qualities related to the environments travelled, more specific student and instructor-oriented learning mechanisms were also reported (see Paisley, et al., 2008 for a discussion on NOLS learning mechanisms). Therefore, NOLS may consider bolstering curriculum that links topics such as natural history more intentionally to sense-of-place development. Furthermore, past longitudinal research studies at NOLS showed five long-term outcomes for NOLS participants; two of these are an appreciation for nature and the ability to serve in a leadership role (Sibthorp, Furman, Paisley, & Gookin, 2008). It is important that leadership serves practical functions for students post NOLS, including functions related to maintaining connections to natural places and to the natural world as a whole (NOLS, 2016).

Given NOLS' focus on stewardship of the natural world, efforts to more consciously blend the environmental studies and leadership curricula may be warranted. Findings from this study such as emerging new perspectives on life and nature (e.g., "Yes, NOLS helped me tremendously because all of the places I go now, I see the beauty of the world around me") could be integrated into the leadership curriculum with the intention of fostering future environmental leaders.

While the results of this case study are not generalizable to larger populations, our findings do help NOLS in understanding some of the details in the ways students report forming a sense of place during NOLS experiences. Further analysis of these data exploring possible connections between sense of place and pro-environmental intentions is currently underway. Useful future research directions could include exploring how sense-of-place development might impact other NOLS learning objectives such as understanding land management and environmental issues and understanding how environmental issues and tourism affect local communities (NOLS, 2016). Finally, other research demonstrates positive links between sense of place and facets of well-being (resilience and sense of community) on outdoor trips (Todd, Anderson, Shellman, Young, & Hutson, 2015), which may also be useful to explore in a NOLS context.

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Gains in Outdoor Pursuits Program Outcomes of Sense of Community, Sense of Place, Nature Relatedness, Well-being and Resilience by Level of Development

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Background

Due to immersion in the natural world for an extended period of time, outdoor pursuits programs have the potential to greatly impact their participants. Research on the outcomes of such programs have identified positive individual effects, such as fostering psychological resilience and mental health, plus positive social changes, such as building sense of community over time (Ryff, Singer, Dienberg Love & Essex, 1998; Shellman & Hill, 2017). Todd and others (2016) have also documented significant increases in outdoor pursuits participants' sense of place and nature relatedness over a two-week period. Scholars define sense of place as emotional and symbolic attachments between an individual and a particular place (Williams, Patterson, Roggenbuck, & Watson, 1992). Additionally, relational attachment or social bonding to place is created when engagement in social relationships within a setting over time gives the place its meaning (Kyle, Norman, Jodice, Graefe & Marsinko, 2007). Finally, Nisbet and Zelenski (2013) operationalized nature relatedness as self-identification and experiential connection with nature using a 6-item nature relatedness scale (NR-6).

An intense two-week outdoor pursuits experience has also been shown to positively impact participants' perceived levels of development (Todd, Young, Anderson & Anderson, 2005). Combining theories of specialization (Bryan, 1977) and serious leisure (Stebbins, 1979), Todd (1997) showed that a single self-identified measure of level of development was a valid and reliable reflection of equipment, knowledge, skill, participation, amateur/professional development, commitment, and experience.

This study explored the impact of an outdoor education practicum on sense of community, sense of place, nature relatedness, resilience and well-being among beginner, intermediate, and advanced outdoor pursuits participants. While these dependent variables have been shown to increase as a result of participation in outdoor pursuits programs, do they increase for all participants of all levels of development (and if so, to the same degree)?

Methods

While enrolled in a 13-day course during the summers of 2015, 2016, and 2017, a total of 184 students spent five days in a camp-like resident outdoor education setting, six days on a wilderness canoe trip in New York's Adirondack Park, and two days back in the residential camp setting. Designed to emphasize building sense of community and developing outdoor living skills, the course was required for students enrolled in recreation-related majors as well as those pursuing environmental and outdoor education minors. A philosophy of community-building permeated every aspect of the course's program, from rituals (e.g., flag-raising, inspirations, culminating banquet, awards, and closing ceremonies) to large group activities (ice-breakers, evening programs, talent show) as well as small group interactions (purposefully assigned trip groups that separated close friends and balanced strengths, low-ropes challenge course elements) and individual reflections (structured daily journals assessing sense of community).

On the first and twelfth days of the course, participants rated themselves on Wagnild and Young's (1993) 25-item Resilience Scale and Keyes' (2009) 14-item Mental Health Continuum Short Form, which measures overall well-being (interchangeably called *flourishing* by the authors) as well as subscales of *emotional*, *social*, and *psychological well-being*. On the third

day, when students met in their trip groups for the first time, and the eleventh day, when the groups returned from their canoe trips, participants completed an 8-item Brief Sense of Community Index (Long & Perkins, 2003), Nisbet and Zelenski's (2013) 6-item nature relatedness scale (NR-6), and a 9-item Sense of Place Scale composed of three subscales: *place identity* and *place dependence* (Williams & Vaske, 2003), plus *place bonding* (Kyle, Norman, Jodice, Graefe & Marsinko, 2007) using "the Adirondacks" as the place. Respondents also self-identified their current stages of development as outdoor pursuits recreationists (backpacking, canoe tripping, etc.) on a 5-point scale (Todd, 2000) ranging from beginner to post-expert.

Results

Chi-square analysis displayed that participants did perceive changes in their levels of development by the end of the course. Two-thirds of beginners rated themselves as intermediates and a quarter as advanced by the end of the canoe trip; two-thirds of those who initially rated themselves as intermediates had progressed to advanced. However, more than three-quarters of advanced participants remained at the same level of development.

Results of dependent t-tests showed that sense of community, sense of place (including the three subscales of place identity, place dependence, and place bonding), nature relatedness, flourishing (including emotional well-being, social well-being, and psychological well-being), and resilience all increased significantly from pre- to post-test for all participants. However, beginners tended to experience the largest gains and advanced participants the smallest gains, particularly in terms of sense of place, nature relatedness, and resilience.

One-way analysis of variance followed by Tukey's HSD post hoc test confirmed that beginners tended to have the lowest scores and advanced participants the highest scores for all dependent variables. However, statistically significant differences were only detected among beginner, intermediate and advanced participants for both pre- and post-test scores of overall sense of place, place identity, place dependence, and nature relatedness as well as pre-test place bonding scores. No differences were detected among levels of development for post-test place bonding, pre- and post-test resilience, sense of community, or flourishing (including the three subscales of emotional, social, or psychological well-being).

Discussion

Based on these data, sense of place and nature relatedness are positively correlated with level of development. Furthermore, immersion in the natural world for a two-week period can positively impact these variables over time. However, beginners are affected to a significantly greater degree than those with higher levels of development. This may be due to a ceiling effect, where advanced participants have little room to advance. Likewise, changes in levels of development happen more quickly at the earlier stages (beginner and intermediate). Either an extended period of time may be needed for advanced participants to significantly progress and rise above the plateau of that stage, or else this two-week experience did not provide enough challenge for advanced participants to record significant growth. It is also important to note that while sense of community, resilience, and well-being increase for participants in outdoor pursuits experiences, they do not seem to differ by level of development. In addition, social well-being was impacted to a higher degree than psychological or emotional well-being, providing an accurate reflection of this particular course's primary objective.

This study shows that outdoor educators can intentionally design programs to build connections with people, places and nature that could in turn foster resilience, well-being, ecological concern, and sustainable behavior. By furthering our understanding of these

relationships, outdoor educators may be in a better position to intentionally build program components that foster human and ecological flourishing. This connection may be of critical importance as individuals continue to regularly disengage from nature.

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Body Image in Professional Women Guides

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Background

This research focuses on professional women guides and explores how their body image is influenced by their work in the outdoor and adventure education fields. Professional women guides are defined as women who are paid to lead groups of people in outdoor settings. The purpose of this study is to explore concepts of body image as they relate to professional women guides. In most Westernized societies, it has become the norm for women to see their bodies in a negative light (Cash & Pruzinsky, 2004). Women direct a great deal of time and mental, emotional, and financial resources into trying to attain a body ideal. Earlier research has shown that being active in nature can positively impact body image (Mitten & D'Amore 2017; West-Smith, 1997).

Women that work in the outdoors are often seen to have the asset of interpersonal skills, rather than their physical skills (Warren, Mitten, D'Amore, Lotz, 2018), however, when guides work in the outdoors it is imperative for them to have strong physical skills to engage in their everyday tasks. So here, this research asks if the women guides have similar issues to the women in Westernized societies, or if they see their body image differently because they probably use it differently. If so, these results could strengthen the theory that the outdoors can be a medium to improve body image. This research is important because body image is under researched in the cohort of professional women guides and this research addresses the need expressed by some authors for more body image research related to the outdoors (Kiewa, 2000; Mitten & Woodruff, 2010).

Methods

A survey was designed for professional women guides based on the survey used in Mitten and D'Amore's 2017 study of Body Image and Nature experience. The survey was adapted by the authors for this study. The survey was distributed through Google Forms and consists of 34 questions divided into five sections. Section 1 covers the confidentiality of the survey, and definition of professional women guides; Section 2 covers the professional outdoor profile of the participant and nature connectedness scale; Section 3 dives into the Body Cathexis Scale (BCS); Section 4 includes demographic information; and Section 5 asks for further comments and questions on the survey. The BCS was developed by Secord and Jourard in 1953 and is used to assess different body parts and parts of the body. Within the BCS participants evaluate 46 body parts and functions according to a five point Likert scale ranging from 1, 'strong negative', to 5, 'strong positive.'

The survey was circulated online through social media and email. It was distributed specifically to Deer Hill Expeditions, Open Sky Wilderness Therapy, Prescott College Adventure Education, NOLS, OB, Indiana University Outdoor Education Program, Every Pedal Mountain Bike, Great Old Broads Wilderness, Alaska Crossings, SheJumps, Wild and Weightless, SheExplores, and Women's Wilderness.

Initial survey responses calculated the Body Cathexis Scale (BCS) for each woman. In the BCS participants as asked to evaluate 46 body parts on a five-point Likert scale ranging from

1, ‘strong negative’, to 5, ‘strong positive.’ This assessment allows a total score to be a good indicator of overall body satisfaction. Women’s BCS scores were then divided into outdoor activity and the professional practice scale. BCS scores were compared to one another in order to obtain results.

Initial Results

The initial results of this study include the following from the professional women guides: mean BCS, outdoor activity, rating of technical skills, age and professional practice scale. These sections were chosen by the researcher, as they were predicted to be indicators of difference for women that work in the outdoors.

BCS Mean

The initial results of this study show that professional women guides have a similar BCS Mean (3.47) to females at Prescott College (3.45) (from Mitten and D’Amore’s study). Both of these BCS means are greater than the general population (2.5) (Woodruff, 2009). Prescott College offers both adventure education and field-based courses at the undergraduate level, and as a result many of the participants engage in outdoor activities on a regular basis.

Study Population	BCS Mean
Professional Women Guides (n=197)	3.47
Females at Prescott College (n=186)	3.45

Age

Another factor to consider with professional guides is age. Younger guides from 19-34 years old have a higher BCS than those over 35. The 19-34 range has BCS scores of 3.4 and above, while those 35 and older have BCS of 3.3 and lower. Within this study, the majority of the participants are under the age of 34 (153) and there are fewer participants 35 and older (44). Initial results need more analysis to determine if age is a factor in body image.

Age	BCS
19-23 (n=22)	3.49
24-28 (n=71)	3.53
29-34 (n=60)	3.55
35-39 (n=25)	3.31
40-44 (n=12)	3.27
45-49 (n=4)	3.11
50-54 (n=1)	2.89
55-60 (n=2)	3.22

Professional Practice Scale

The guiding profession is diverse, and guides’ professions can range from teaching outdoor education to leading a therapeutic experience for an individual. As such, it is important

to consider what aspect of the guiding world individuals come from. In this study, participants indicated whether they worked in the following areas: Education, Experience Based Education, Outdoor Education, Outdoor and Adventure Programs, Therapeutic Adventure Programs. In comparing these divisions of professional guides it was found that those in the Education sector had the highest BCS (3.59) and those in the therapeutic adventure programs have the lowest BCS (3.31). The therapeutic adventure guides also had the smallest survey completion numbers (17). However, it brings up the question if those within the therapeutic adventure world have had more experiences leading to negative body image.

Professional Practice Scale	BCS
Education (n=36)	3.59
Experienced Based Education (n=40)	3.47
Outdoor Education (n=62)	3.50
Outdoor and Adventure Programs (n=42)	3.38
Therapeutic Adventure (n=17)	3.31

The initial results of this study show that potential combination of high technical skills, age and being involved in the education sector of guiding may contribute a more positive body image. Because these are initial results, they need to be analyzed further including statistical analysis to test for significance. Within this cohort, the guides' amount of outdoor activity does not appear to have an impact on professional guides body image. It also does not appear that professional guides have a higher body image perception than women who recreate in the outdoors, as compared to Mitten and D'Amore's 2017 study. This research adds to the greater body image research, and takes into account factors that have not previously been considered. However, we believe it also sheds light on how body image is unique to each woman.

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The Impact of an Organized Night Walk on Brain Wave Activity and State-Trait Anxiety

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Background

Organized night walks include experiential sensory activities intended to increase participants' appreciation for the outdoors while they learn about the nocturnal world (Daniel & Knapp, 2014). Night walks are conducted regularly in programs offered at camps and environmental education centers (Daniel & Knapp, 2014) yet there has been very little research on the impact of organized night walks (Beeco, Hallo, Baldwin, & McGuire, 2011). Many of the studies that have been done include night walks as one of many components of broader experiences (Hunter, 2015; Mittelstaedt, Sanker, & VanderVeer, 1999). The purpose of this exploratory study was to understand the effect of an organized night walk experience on anxiety states as exhibited in brain wave activity before and during the experience. The methods used constitute an emerging line of inquiry that uses portable Electroencephalogram (EEG) devices to measure brain wave activity during an experience. EEGs allow researchers to better understand how outdoor experiences affect the neurophysiology of the mind (Bailey, 2017). EEG research provides an important theoretical framework for understanding experience.

Literature

Many benefits of being outside have been identified including nature's therapeutic effect (Berger & McLeod, 2006; Garst, Scheider, & Baker, 2001; Peel & Richards, 2005), and nature's ability to both relieve stress (Cole & Hall, 2010), and restore attention (Cole & Hall, 2010; Kaplan & Kaplan, 1989; Kaplan, 2001). Research is sparse on the impact of nature on individuals at night. Beeco et al. (2011) conducted a phenomenological study on visitors' night walk experiences in parks and protected areas. The study identified relevant characteristics of the night setting and described the lived experience of the night hikers including their motivations for the experience (Beeco et al., 2011, p. 72) but it did not utilize neurophysiological tools such as EEGs. EEGs measure and record the electrical activity in the brain using electrodes contacting the scalp (Blackhart, Minnix, & Kline, 2006). EEGs have good *spatial* resolution due to direct contact with the scalp over the various regions of the brain. EEGs also have great *temporal* resolution because they measure and record continuous electrical activity in real time.

Relatively few studies have used portable EEGs in outdoor and nature research due to technological constraints (Bailey, 2017). Aspinall, Mavros, Coyne, and Roe (2013) used Emotiv EPOC emotion detection hardware to distinguish between cortical signals recorded in participants that spent time in urban and green spaces. They found evidence of restorative effects of walking in green spaces compared to urban settings but the study did not include EEG raw data due to hardware limitations. Using Attention Restoration Theory (ART) as a theoretical framework, Chang, Hammitt, Chen, Machnik, and Su (2008) tested the restorative effects of viewing images of wildlands and found that physiological and restoration measures were linked. Their study, however, used photos instead of actual field experiences. EEG techniques have also been used in studies on anxiety. Cattell and Scheier (1961) described anxiety as an emotional state (particular experience) and/or a personality trait (genetic predisposition to experience anxiety). Spielberg (1977) used Cattell and Scheier's construct to develop the State-Trait Anxiety Inventory for Adults. Studies on anxiety and darkness have found that darkness induced the startle response of participants (Grillon, Pellowski, Merikangas, & Davis, 1997) but these studies were conducted in laboratory settings. Muhlberger, Weiser, and Pauli (2007) tested darkness-enhanced startle response in a virtual reality tunnel simulation and

found that participants with lower state anxiety had weaker startle responses but they did not use EEG measures. EEG technology has been used to record brain wave patterns of individuals experiencing anxiety (Blackhart et al., 2006; Davidson, 2002; Oathes et al., 2008) and State-Trait Anxiety has been measured in studies of darkness. This was the first study however to measure both EEG and State-Trait Anxiety in the context of an organized night walk.

Methods

Participants

All participants were Montreat College students that had never participated in an organized night walk (n=12). The majority of the sample were male (n = 7) students. Participants ranged in age from 18-30. EEG research usually involves lower sample sizes than survey research (Sands, 2009) and a small sample was desirable for an exploratory study.

Research Design

All participants signed informed consent forms prior to participation. Four Emotiv EEG helmets were used in Fall 2014 and Fall of 2017 to collect full brain wave activity data after procuring IRB approval at Montreat College. Participants (n= 12) took the State-Trait Anxiety Inventory (STAI) for Adults (Spielberger, 1977) in order to establish baseline anxiety data just prior to a 1.5 hour night walk. Each participant (n=4) wore an Emotiv EEG helmet (which collected data from 14 locations in the cerebral cortex) that was connected wirelessly to either a tablet or laptop in a small backpack to record full and raw brain wave frequency data in real time throughout the experience. Since only five helmets were available, three hikes were conducted. Students completed a series of sequenced activities on the night walk. Although the data was collected over three evenings with different groups, the same activities were done in the same sequence by the same facilitator. EEG data will be transformed into 5 distinct ranges of frequencies (Alpha Beta, Delta, Gamma, and Theta) and data analysis will focus on the ratio of Beta, Theta, and Gamma (Oathes, et al., 2008) waves produced during the night hike experience.

Results

The STAI was scored for the sample to produce both state and trait anxiety scores. The male participants scored within the normal range on both state (M = 33.58, SD = 9.22) and trait (M = 39.0, SD = 7.78) anxiety for college males, while the female participants scored slightly below norms for college females on both their state (F = 31.5, SD = 2.87) and trait (F = 32.5, SD = 3.93) anxiety. Taken together, the results of the STAI indicate that the participants were not anxious just prior to the night walk. The EEG recordings of participants reveal that changes in brain wave patterns can be detected during the sequenced night walks, and that affective states changed across the solo portion of the night walk. Participants were aroused during the solo portion and these changes in brain waves were detected by the EEG helmets.

Future Directions

Real time EEG data was synchronized with a digital recorder that recorded all dialog during the night walk. The purpose of this larger study was to examine the relationship between participant anxiety, as measured by the STAI, and specific EEG patterns of participants of a night walk, as measured with Emotiv helmets.

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Autonomic Responses to Adventure: An Alpine Tower Experience

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Background

Outdoor adventure programs use unique outdoor environments and challenging activities to create “adaptive dissonance” and provide a space for participants to improve their skills (Walsh & Golins, 1976). The outdoor, social environment creates challenges and stressors that change throughout the course of the day (Bunting et. al., 2000). The physical and psychological nature of these activities can cause our bodies to prepare for a fight or flight scenario (Bunting & Gibbons, 2001) with biophysical manifestations such as increased heart rates (Coetzee, 2011).

While previous studies have addressed biological indicators of stress in adventure experiences (Davidson, Chang, & Ewert, 2014), research tracking autonomic changes has received only limited attention. Heart Rate Variability (HRV), the variation in inter-beat intervals, provides a non-invasive measure of autonomic function (Sztajzel, 2004), and physiological self-regulation (Thayer & Lane, 2009). Data may be collected utilizing a sport performance strap and smartphone technology, with accuracy similar to a traditional electrocardiogram (Plews, 2017) and improved portability. Using HRV frequency analysis, increases in the high frequency (HF) range are an indicator of parasympathetic activity, where low frequency (LF) may represent sympathetic activation, with the LF/HF ratio used as a measure of stress (Park et. al., 2010; Sztajzel, 2004).

In this study, *in situ* recordings of HRV during the alpine tower were used to provide insight into the sympathetic and parasympathetic reactions of participants. These insights may lead to a better understanding of arousal and capacity for learning and growth during these physical and mental challenges. In short term experiences, we expect to see individuals shift from a sympathetic state (Coetzee, 2011) to parasympathetic and back again over the course of the climb and decent.

Methods

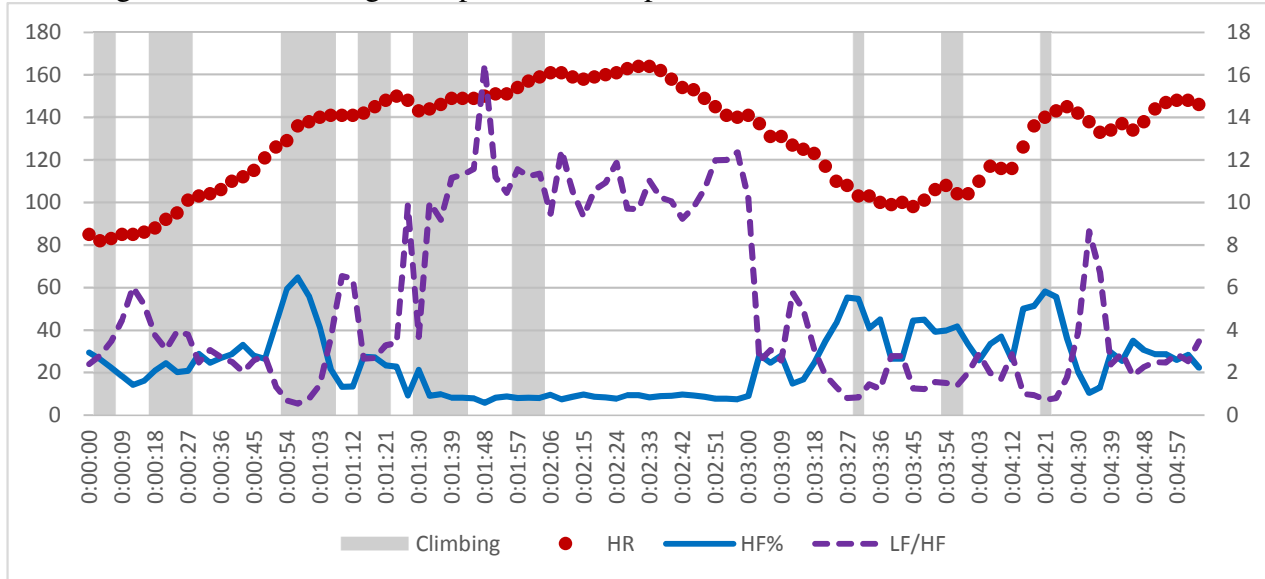
Participants were recruited during an Alpine Tower training at a Midwestern outdoor center. To address the question, “how does the autonomic nervous system respond during outdoor adventure experiences,” participants wore Polar H7 heart rate monitors and smartphones. The smartphone application exported two files for analysis, the inter-beat intervals in milliseconds (RR), and HRV variables as averages of the previous three seconds. Video was taken to review climbs, and timestamps of individual climbs were manually recorded by the research team. While the study data included six participants and 18 climbs, the analysis began by using a single climb as a case study, and is reported here. After pairing video with the corresponding time stamps, the video was analyzed to note whether the participant was climbing or not during the previous three seconds.

Results

Through video analysis, several trends emerged. Peaks in the high frequency percentage of total power (HF%), representing parasympathetic activity, aligned with climbing segments, where LF/HF or stressful periods peaked during non-climbing segments (see Table 1). Peaks and troughs in the HF% were matched to climbers’ behavior allowing for mixed methods analysis. At 2:06, the participant reaches a horizontal beam and stands on it until 2:54-3:12 where body language might indicate he is planning to continue climbing. As his LF/HF ratio decreases he

begins to climb again at 3:30 but quickly stops with a corresponding fall in HF%, changing the LF/HF ratio. His HR began to rise again, at 4:18 he announces that he is ready to come down, and at 4:33 his weight is on the rope to be lowered back to the ground, corresponding to a peak in LF/HF activity. While heart rate increased through the first half of the climb, HF% fell and remained low while the participant was not climbing and only increased after climbing resumed. During this time, heart rate peaked at 164 before lowering to 103 where the participant resumed climbing. Post-climb, HR increased rapidly to a peak before deceleration and recovery.

Table 1
Tracking Biomarkers during an Alpine Tower experience



Left Axis: HR & HF% of Total Power, Right Axis: LF/HF ratio

Discussion and Implications

This study was able to track changes in autonomic function *in situ* throughout an alpine tower climb. Through the use of recorded video, heart monitors, and smartphone technology, changes in HR and the autonomic nervous system were able to be matched to movement in a climbing experience. The results indicate lower stress levels during physical activity than during pauses, where the participant may have been anticipating their next move or a potential fall. This confirms the findings of Allison and colleagues (2012) who noted increases in HR during anticipation of a fall from height. Other researchers have found that individuals may have a tendency to respond either in anticipation or as a reaction to stress (Engert et al., 2013).

The peaks and troughs of HF and LF/HF HRV may be seen as stress and coping, with the climber needing to maintain a comfortable HR and stress level before continuing to climb. The decision to come down was made during a moment of high HF activity, suggesting a need for comfort or wanting to end on a high note. As his weight was placed on the rope to be lowered, a moment of heavy reliance on the belay team, the participants stress increased. Although HR decreased during the decent, it rose rapidly and reached its peak after the climb was over, suggesting a mental element of the climbs resolution was highly invigorating.

Future studies should focus on psychological stressors that are more physically similar, and allow participants to annotate the video with reflection on their state of mind. While watching a participant climb, facilitators are often unaware of the psychological stressors they

are facing. This study is an important step to visualizing and interpreting a participants' climbing experience. These findings can be useful for programmers and instructors hoping to facilitate a positive, life-changing experience for their students and clients through exposing them to adventure-based activities and experiences without provoking over arousal.

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“Levels of Nature” and Stress Modification

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Background

It is generally assumed that education in outdoor environments can be effective pedagogical teaching venues and a robust body of research supports this contention. Ironically, however, we know much less regarding variables such as type of outdoor setting or the length of time spent in that setting, and their effects on educational efficacy. A similar issue exists in the area of human health and natural landscapes, where little is known regarding the effect length of time spent in a natural environment and intensity of that experience have on factors associated with human health. For example, Pilotti, Klein, Golem, Piepenbrink and Kaplan (2015) found that even viewing a nature video after work was restorative in task performance and long-term memory. Using the concept of “levels of nature,” this study examined issues related to dose-response by inculcating three different environmental settings and activity sets in order to examine their relationship to levels of stress. For the purpose of this current study, stress is defined as *a process through which specific demands (e.g., work, child care, class assignments, etc.) are perceived to exceed an individual’s resources or abilities to control or manage effectively*. This dichotomy between individual resources and specific demands can result in the development of a number of undesirable physiological, psychological, behavioral, or social outcomes commonly associated with the concept of stress (Salas, Driskell, & Hughes, 1996).

A growing number of studies have shown that visiting green spaces and being exposed to natural elements can reduce psychological stress, increase psychological well-being, and support recovery from illness and disease (Hansmann, Hug, & Seeland, 2007; Korpela, Ylen, Tyrvainen, & Silvennomen, 2008; Pretty, Peacock, Sellens, & Griffin, 2005). In addition, Bowler, Buyung-Ali, Knight, and Pullin (2010) found evidence of the direct and positive impacts on well-being and health from exposure to natural settings. Using meta-analysis, McMahan and Estes (2015) found that type of exposure to nature and location were influential in the increasing of positive affect and lowering of negative affect. However, there are still a number of unanswered questions that have relevance to the broad area of outdoor education, such as, are activities engaged in natural environments more or less beneficial at reducing stress and create more positive learning venues than those done in more developed settings?

Methods

Using the biophysical markers cortisol and α -amylase, and a psychological measure this study was designed to answer the following research question: After controlling for initial levels of stress, time of day, time of semester, and weather, were there differences in levels of post-visit stress between the different types of sites ranging from natural to urban environments? The inclusion of physiological measures, in addition to standard survey methods were considered a particular strength of this study in that it broadens our understanding of the multidimensional stress responses reported by visitors to sites with varying degrees of “nature.”

This study utilized three locations: a) a “natural” setting (S1), b) an urban “outdoor” setting (S2) and c) an “indoor” exercise facility (S3). S1 is a nature preserve primarily comprised of relatively natural, wooded trails that surround a small lake. S2 is a municipal park located in the city served as the study site representing an intermediate level of nature and consisted of facilities such as open space, playground equipment, and tables. S3 consisted of a full service

indoor fitness facility. Based on these data, a quota sample was developed in order to select participants who are representative of the overall population of users for all three locations (Henry, 2009).

Sample Design and Measures: To measure changes in biophysical levels of stress, cortisol and α -amylase saliva samples were collected. Study participants were asked to provide 3-5 ml saliva samples just prior to the start of their recreational experience and immediately following the conclusion of the experience. Cortisol was measured by ELISA techniques using a TECAN multi-plate reader and α -amylase was measured using colorimetric approaches with a multiple spectrophotometer. The sampling time frame was within the 45-minute collection time for cortisol as suggested by Barker, Knisley, McCain, and Best (2005). Because salivary cortisol levels are particularly subject to variability in the early morning awakening hours, only those respondents arriving to the study sites after 5:00pm were tested (Pruessner, et al., 1997). The self-reported psychological measure of stress was the *Perceived Stress Questionnaire* (PSQ) (Fliege, Rose, Arck, Walter, Kocalevent, Weber, & Klapp, 2005). Following Fliege's et al. (2005) recommendation of at least 30 samples per cluster to have the statistical power approaching 0.6 with a medium effect size of 0.5, the target sample size for this study was set at $N = 90$.

Results

From an overall sample of 98 visitors, paired sample t-tests were conducted to compare participants' stress levels before and after visiting the three different locations respectively. Results indicated that levels of both cortisol and α -amylase levels significantly decreased after visiting the site with the highest level of nature (S1), but not after visiting the other two sites with lower levels of nature (S2 and S3). For changes in levels of PSQ, a one-way repeated measures ANOVA was conducted to compare participants' changes in four constructs of perceived stress levels respectively (e.g., Demand, Worries, Tension, Joy) and as measured at the three different locations. Results indicated that S1 was associated with a significant impact on participants' changes of levels of Joy ($F(2,98) = 6.74, p < .05$) but not S2 or S3. In addition, post-hoc tests revealed that the changes of participants' level of Joy measured at S1 was significantly greater than the changes reported at the other two sites.

Discussion

After controlling for potential confounding variables such as weather, time of the day the site was visited, and the physicality of the activity, the data suggest that level of nature can have an effect on both biophysical and self-reported levels of stress. One alternative explanation for these findings is that landscapes offering a more natural environment can be perceived by the visitor as more restorative. Hartig and his colleagues (2003 & 1991) found that walking in a natural environment was perceived by the participants as more restorative than walking in an urban surrounding. Korpela, Ylén, Tyrväinen, and Silvennoinen (2010) demonstrated a link between the desire for restoration (e.g., freedom from worries and stress) and the use of "environmental self-regulation strategies (ERS)." They defined ERS as personal behaviors, such as visitation to selected locations (e.g., parks and other natural environments), for the specific acquisition of restorative outcomes. That is, individuals deliberately engage in selected activities and in specific locations for the specific purpose of achieving a particular goal such as reducing stress. Natural areas may be more effective at reducing stress than more developed areas because the visiting public believes them to be more restorative and deliberately seeks these locations out

for that very purpose. Perhaps a similar expectation could be made for education in the outdoors; that is, paraphrasing L.B. Sharp, “that which is best taught outdoors should be taught there.”

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Sustainable Adventure? Outdoor Adventure Education as a Way of Life

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Context

A brief survey of the United Nations Environment Programme (www.UNEP.org) provides a global perspective on the depth of our environmental crises. Strong admonitions for sustainable practices litter its digital pages. While questions of sustainability and Outdoor Adventure Education (OAE) remain long-term concerns for British and Australian practice (e.g. Lugg, 2007; Prince, 2017), the effort to address sustainable adventure within US OAE programs has been surprisingly limited.

This conceptual presentation highlights the need to begin a formal examination of sustainable OAE in a North American context. In particular, it suggests the need to broaden traditional perspectives on “adventure” and “wilderness,” so that our educational practice becomes consistent with the inbuilt limits that accompany sustainable living.

Argument

The expansive and sublime nature of the American landscape has no doubt affected our perspectives on “adventure” and “wilderness.” Nash (2001) notes that the “pioneer values” that led to the exploration of the American West still inform our values today (p. 150). Similarly, with the US federal government owning some 640 million acres (Hardy, Hanson, & Argueta, 2017), opportunities for exploration remain nearly boundless. Further, with some 80 million acres managed by the National Park Service, whose mission is to “preserve unimpaired” lands for “outdoor recreation” purposes in particular, our perception of lands worth exploring has been influenced by our reverence for *America’s Best Idea* (<http://www.pbs.org/nationalparks>). Comparably shaped by this ideal, our Wilderness Act celebrates a rather narrow definition of wilderness that prioritizes “untrammelled” landscapes where humankind is a visitor that does not remain.

I submit that these aspects - with many others (see Bell, 2016; Cronon, 1995) - of our nation’s history have shaped our interpretation of “adventure” and “wilderness” creating programmatic preferences for remote and majestic (e.g. crown jewels) landscapes. The result of these proclivities has been a tendency for many US OAE programs to draw participants from distant locations, necessitating their *travel* to these remarkable places for *extended* periods of time. Two influential examples of this pattern are the Outward Bound and NOLS traditions. Since so many OAE programs model their courses after these eminent organizations (Daniels, Bobilya, & Kalisch, 2006, p. 12), a culture of preference has grown.

While I too am drawn to remote and sublime environments, I fear this appetite has led us towards unsustainable practices. Most obviously, the fossil fuels necessary to access these privileged landscapes produce wastes beyond the current carrying capacity of our atmosphere (NASA, 2013). Less obvious, though, are the (innocently committed) pernicious effects of these programs’ subtle implications for participants: that adventure requires remote landscape and that beauty is a scarce commodity concentrated in protected lands. If adventure (Whitehead, 1933) and beauty (Struton, 2009) are fundamental human needs for flourishing, then we must find sustainable ways of meeting them.

This notion of “sustainable adventure,” though, ought to reach more broadly than carbon neutrality. Sustainable OAE should also be education that aims to teach sustainable living through adventure. Again, although other countries have begun to transform their outdoor-based curriculum to address sustainable education (e.g. Hill, 2013), North America has been slower to

do so, with several notable exceptions in Canadian scholarship (O'Connell et al, 2005; Grimwood, Haberer, Legault, 2015; Mullins, 2013). While the LNT Center for Outdoor Ethics is to be applauded for their efforts in teaching low impact philosophy, as others have noted (Simon & Alagona, 2009, p. 27) an unintended result of the LNT curriculum has been a limited ethical purview to parks and wilderness areas. While LNT has since emphasized their Front Country program, recognizing that far more impact happens there, sustainable OAE could address far more than travel and camping techniques.

Defining Sustainability

Various definitions of sustainability have been offered, all with their own merits and limitations. I'll highlight several common concepts that may be helpful for OAE. Perhaps the most popular definition, the UN's Brundtland Report (1987, p. 43) provides a concrete aspiration towards which OAE programs can strive, asserting that sustainable practice "meets the needs of the present without compromising the ability of future generations to meet their own needs." Another helpful frame work for OAE programs might be Elkington's (1997) Triple Bottom Line (TBL) for sustainable business practice. TBL aims to measure the environmental, social and financial costs of a business, or OAE program, over time. By examining these aspects, an organization is committing to a "full cost" accounting of its actions.

Given these definitions, it seems to me that the foremost trait of Sustainable OAE must be that it is local. Recent publications have heralded this conclusion. In *A Pedagogy of Place: Outdoor Education for a Changing World*, Wattchow & Brown (2014, p. ix) note the opportunity that outdoor education has to help transition the populace to the inevitable changes we must make as a result of the environmental challenges we've created. Helping our participants come to know and value the places in which they live will be indispensable to sustainable OAE. Beames and Brown (2016, pp. 48-49) comparably challenge the way we've defined adventure. They believe we confused adventure with physical risk, when the far deeper need of the participant is genuine learning opportunities that stress: authenticity, agency, uncertainty and mastery. They argue that these traits lend themselves to place-based, culturally-relevant OAE programs. Unquestionably, this would require a shift within our practice. Instead of facilitating longer courses to more remote landscapes, sustainable OAE might focus on local areas, for briefer amounts of time, far more often. If it seems like a stretch to find adventure frequently near home, we would do well to remember Thoreau (1861/1987, pp. 13-14) who claimed a harmony between the land in a 10-mile radius around one's home and a life expectancy of some 70 years – one could never quite explore it fully. Coming to know and appreciate your home seems requisite for a sustainable ethic. For, as Rachel Carson (1965) has implied, unless we are able to find *A Sense of Wonder* in a place, it is unlikely that we will come to care for it. By nurturing relationships with one's place on a more frequent basis, this model of OAE would share values embodied in the Norwegian concept of *Friluftsliv* (Henderson & Vikander, 2007), often translated as "open air life." That is, a central aim of sustainable OAE would be to model a way of living in one's place that invites participants into a daily relationship with the natural and cultural world that they are part of. While such a model begins to blur lines between place-based, environmental and outdoor adventure education, adventurous learning (see Beames & Brown above), although on a "micro" scale (see Humphreys, 2014 and Rawls, 2013), is still essential.

Conclusion

This model, in attending to the triple-bottom-line of sustainability, addresses problems perennial to OAE. While the environmental element would certainly be met through decreased carbon-imprints and deeper connections to nature, perhaps more importantly, this model would also address injustices related to social and financial sustainability. By providing local, simpler, forms of OAE we could begin to address the long-term inequities of privileged access and cultural exclusion (Beames, Humberstone, & Allin, 2017) within our programs.

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The Use of Education Programs in Community Gardens, as an Intervention to Develop Families' Environmental Behavior

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Background

Outdoor recreation programs vary broadly in their setting type, their delivery approach and who the recreation experience is for (e.g. individuals or groups, such as families). Numerous studies have investigated the effect that family orientated outdoor recreation can have on family bonding, physical activity and knowledge expansion (Dorsch, Richards, Swain, & Maxey, 2016; Flynn, Bassett, Fouts, Thompson, & Coe, 2017; Freeman & Zabriskie, 2002; Zimmerman & McClain, 2014), yet none have focused on the family in conjunction to community gardening. The aim of this study was to investigate the significance of educational workshops in community gardening as a family intervention in changing environmental behaviors and promoting city sustainability practices and behaviors. While our site of investigation is not the typical community gardening setting, as it offers compulsory structured gardening and environmental educational programs to the participants, it provided us an opportunity to study what families want from and what can be offered at the community gardens. In this study, we developed and used an ethogram as part of the mixed method methodological approach that we used. Ethograms are widely used in the observations of non-human primates, but not exclusively, in disciplines such as conservation biology and ecology, assessing the social behavior of the subjects (Stanton, Sullivan, & Fazio, 2015). Although ethograms are a tool for social sciences to assist in continuous monitoring of the subjects (Bernard, 2006) it is uncommon in its use. During our literature review, we did not find any studies that had utilized ethograms in observing families (humans) in the outdoors. As with many methodologies and approaches, there are advantages and disadvantages in using them for specific approaches. Developing an ethogram requires a dynamic approach as ethograms alter with the development of a study. Behaviors can be added or deleted depending on the research question and the investigator's development in the study. Depending on the behavior under study, ethograms can take an inordinate amount of time to create and refine, with some taking decades to develop (Humble & Newton-Fisher, 2013). Although the ethogram we developed is for the specific needs of our study, and it would not be easily applicable to other research projects outside of community gardening, it provides us with an understanding of how ethograms can be used in the future in the field of outdoor recreation to get an introductory understanding of individuals' behaviors and how to quantify them.

Methodology

Our study site was Hilltop Garden and Nature Center, a part of the Indiana University Bloomington campus. There were 13 families participating in our study with 42 individual subjects, n=42. The number of family members varied from two to four individuals. The age of the participants varied between 3 to 41 years old. In this study, we used a case study mixed methods approach. The methods employed for data collection were a) the use of an ethogram for family observations (Bernard, 2006; Nippert-Eng, 2015), b) the development of an interview protocol (Creswell & Plano-Clark, 2007), and c) retrospective surveys (Allen & Nimon, 2007). With the ethogram we recorded events of behaviors (Altmann, 1974) of the families. The change of events was determined by behavioral alterations during the families' engagement in community gardening. Three categories of behaviors were observed 1) knowledge, 2)

environmental behavior, and 3) engagement. As well evidences of emotions were inferred. Each behavior observed in the field, had several behavioral items corresponding to the ethogram. With family interviews, we aimed to get a better insight understanding of the benefits of community gardening for the family; the interviews were transcribed and coded. Parents completed an online survey, with the “New Ecological Paradigm” scale by Dunlap, Van Liere, Mertig, and Jones (2000); and children between the ages 7 and 8 completed the adapted for children “New Ecological Paradigm” scale by Manoli, Johnson, and Dunlap (2007). In her paper Yuen (2004) considers the importance of drawings in leisure studies and the in depth information they can provide us for a child’s experience. Drawings were created by the younger children (ages 4 to 6), allowing us to have a deeper understanding of their experience during community gardening. Children had the opportunity to explain and discuss their drawings during the family interview sessions.

In total, we received 20 parent surveys, 4 children surveys and 10 drawings. We conducted 39 family observations and interviewed 7 families. The number of family observations varied from 1 to 5 observations per family.

Data Analysis

The data from the observation analysis suggests that children environmental behavior is significantly correlated with their parents’ engagement ($P < 0.000$), but not with parents’ knowledge. From the retrospective survey, we found that parents benefitted from their class workshops as their knowledge in gardening developed. The two items that parents gained most knowledge was “the importance of soil to plants” and “use of natural alternatives solutions to pesticides and artificial fertilizers”. Their gardening skills increased significantly ($P < 0.000$), when compared to their skills before the educational workshop. Descriptive analysis of the children data, showed an increase in their knowledge and their gardening skills compared to their knowledge and skills prior the educational workshops.

Our qualitative data from the interviews, confirm the findings of the quantitative data. During the interviews, both parents and children reported that their gardening knowledge has increased with the children emphasizing on their acquired knowledge on animals and plants found in the community gardens. Parents stated that their children started using scientific terms in their vocabulary such as pollination.

We believe that the above methodology can be beneficial while working with focus groups in Leisure, and we are interested in assessing their development during an intervention and how individuals interact with each other.

The presentation will briefly report on the findings of the study, including associations between knowledge and behavior, but will emphasize on the research methods applied in the study.

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Applications and Attributes of Conservation Psychology Measures

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Background

Outdoor educators understand the importance of humans' connection to nature. In recent years a plethora of ways to measure these connections have emerged. This research is intended to help outdoor educators who wish to employ nature connectedness indicators in future studies make decisions about which to use.

Conservation psychology “values human and ecosystem health, and aspires to enhance the healthy relationship between humans and the rest of nature” (Clayton & Saunders, 2012, p. 3). Conservation psychology addresses how psychological principles influence conservation attitudes and environmental beliefs and views (Clayton, 2012; Clayton & Saunders, 2012; Saunders, 2003) and examines concepts including, but not limited to, environmental justice, the role of nature in built environments, human health and well-being, development of children, sustainable development, and people's attitudes and views toward conservation.

A specific facet of conservation psychology explores the concept of identity and measurement of views, attitudes, and psychological attributes regarding conservation. Conservation psychology measures are powerful tools that can provide insight on how people think and feel about nature and their environments. This area of research deals in part with the development and testing of constructs that can quantify various attributes through series of questions, exercises, pictures, and word associations. This sub discipline of quantifying identity has had a growth in research in recent years as practitioners seek to understand and quantify how people relate to and view the environment in the face of growing environmental pressures. To date, a variety of conservation psychology measures have been constructed and tested, and commonalities and differences exist in terms of design and attributes measured.

This paper serves as a review of existing conservation psychology measures in respect to their overlying principles, structures, and usability.

Method

A thorough literature review was conducted to identify existing conservation psychology measures. Following identification and location of each measure in full context, an autoethnographic approach was used to evaluate seventeen conservation psychology measures; each measure was completed and scored, and notes on the overall impression of the measure were recorded. As a case study four instruments were used in a study of conservation gardeners. Individual indicators were evaluated for type of attribute measured, construction of indicator, comparable values produced, and ease of use. Measures evaluated: New Environmental Paradigm (NEP), Environmental Values Scale (EVS), Emotional Affinity Towards Nature (EATN), New Ecological Paradigm (revised NEP) (rNEP), Environmental Motives Scale (EMS), Inclusion of Nature in Self (INS), Environmental Identity (EID), Connectedness to Nature (CNS), Connectivity with Nature (CWN), Commitment to Nature (COM), Nature Relatedness (NR), Kellert-Shorb Biophilic Values Indicator (KSBVI), Love and Care for Nature (LCN), Environmental Gardening Identity (EGID), Disposition to Connect with Nature (DCN), NR-6, and Environmental Connectedness (EC).

Results and Discussion

The majority of indicators are constructed using Likert style statements; however, two incorporate Venn-style diagrams and two have other types of verbal structures. Eleven indicators measure environmental views and/or behaviors, ten measure a connection to nature, seven measure both views/behaviors and connection to nature, and four measure an attribute other than views/behaviors or connection to nature. Two of the indicators provide both an overall score and subscale scores; eleven provide only an overall score and four provide only subscale scores. Fourteen of the seventeen measures are identified as easy to use based on time required for completion and ease of scoring as displayed in table 1.

Table 1
Attributes of Conservation Psychology Measures

Measure	Indicator of			Values Produced		Usability	
	Views/ Behaviors	Nature Connection	Multiple Aspects	Overall Score	Subscale Scores	Time to Complete	Ease of Scoring
NEP	X			X		2	1
EVS			X		X	2	3
EATN	X	X			X	1	2
rNEP	X			X	X	2	2
EMS			X		X	1	1
INS		X		X		1	1
EID	X			X		2	2
CNS	X	X		X		2	1
CWN	X	X		X		1	1
COM	X	X		X		1	1
NR	X	X	X	X	X	2	2
LCN	X	X		X		2	1
KSVBI			X		X	3	3
EGID	X			X		2	1
DCN	X	X		X		2	4
NR-6		X		X		1	1
EC		X		X		1	1

Note. Time to Complete: 1, approximately one minute or less; 2, between 2 and 5 minutes; and 3, over 10 minutes. Ease of Scoring: 1, very quick hand scoring; 2, simple by hand but requires a few minutes; 3, simple but requires additional time to hand score; and 4, requires use of statistical analysis for scoring.

One of the earliest and most commonly used indicators is the New Environmental Paradigm (NEP) scale developed by Dunlap and Van Liere (1978). This 12-item indicator measures the overall beliefs and views that people hold in respect to the environment. This indicator has been used in hundreds of studies over the years and has served as a foundational contribution to how researchers measure pro-environmental beliefs (Dunlap, 2008). A number of other conservation psychology measures have been developed since the original NEP. These different measures have been developed to gauge different facets of environmental or nature connections and views, or, to refine existing ideas or measures. The measures may be employed individually in respect to demographic variables, environmental characteristics, or other areas of

comparison, and also used simultaneously to gain a wider perspective, or to test the validity and strength of new measures.

Understanding the varying strengths and purposes should strengthen the use of conservation psychology measures and raise awareness about the availability and potential applications of these useful tools.

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Effects of National Park Landscapes on Inspiration: An Exploratory Study

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Background

What feelings and thoughts do landscapes evoke? Why are people drawn to certain landscapes? Are some landscapes or landscape characteristics more inspirational than others? An exploratory, qualitative study was conducted in the summers of 2015 and 2017 to explore the relationship between landscape and inspiration through the theoretical framework of topophilia - the affinity people have for certain places or landscape features (Tuan, 1974). Participants were students on an extended traveling college field course called American Ecosystems (AE). On both courses, students studied the flora, fauna, ecology, weather, climate, geology, landforms, and environmental issues associated with each national park or monument. Each student was responsible for teaching about one place.

Topophilia is the affective or emotional bond between people and place or setting. It involves an affinity for locations and landscapes (Tuan, 1974). Studies have identified multiple factors that influence perception of landscape including culture/cultural history, age, gender, background, and familiarity (native or visitor) (Gibson, 2009; Tuan, 1974). The impact of landscapes on people has been studied in a variety of contexts including field courses (Boyle et. al., 2007; Elkins & Elkins, 2007; Hope, 2009) and wilderness experiences (Fredrickson & Anderson, 1999; Kaplan & Kaplan, 1995). Topophilia-related research has looked at landscape's influence on environmental perception, attitudes and values (Tuan, 1974), quality of life (Ogunseitan, 2005), environmentally responsible behavior (Vaske & Kobrin, 2001), environmental sensitivity (Metzger & McEwen, 1999), connectedness to nature (Mayer & Frantz, 2004), and sustainability (Beery, Ingemar Jonsson, & Elmberg, 2015).

Previous research on human-nature attachment has often focused more on individual to place than place to individual or "the affective appeal that place impresses upon the individual" (Frederickson & Anderson, 1999, p. 22). To date, little research has looked at the ability of landscapes to inspire. Thus, more research is needed on the impact of the setting or place on the human experience. A topophilic connection can be intellectual, spiritual, or emotional, and the connection is often related to characteristics of the place (Tuan, 1974). The purpose of this study was to explore the attraction between participants and places/landscape features, as well as if and how that affinity created a sense of inspiration, defined as "the process of being mentally stimulated to do or feel something" (OED, 2017). This presentation will include the survey data collected at the end of each trip.

Methods

Participants in the study were chosen based on criterion sampling (Creswell, 2014). All participants were students on either the 2015 (n=15) or 2017 (n=15) AE traveling field course offered by Montreat College. The 2015 course visited 19 U.S. National Parks, Monuments, and natural areas over 26 days and the 2017 course visited 14 similar places over 18 days. Students traveled on a sleeper bus, which allowed the group to visit many parks in the American West in a relatively short amount of time. Participation in the study was completely voluntary and not connected to student grades. Participants majored in environmental studies, biology, outdoor education, English/creative writing, communication, and psychology.

The Montreat College Institutional Review Board approved the study in May 2015. All AE students received a description of the study and were invited to participate. Students wishing to participate in the study signed an informed consent form prior to the trip. All participant surveys were confidential and anonymous.

The study used a qualitative approach (Creswell, 2014) and a grounded theory design (Corbin & Strauss, 1990) for data analysis. Grounded theory is an appropriate methodology for exploratory research, because it begins with an open-ended question (Creswell, 2014).

Data collection took place in two phases. First, a short survey consisting of open-ended questions was administered immediately after visiting each park to determine if students were inspired by the place and, if so, to determine what features or qualities inspired them. Based on their responses, they were asked why they thought each place was/was not inspirational. In addition to questions about inspiration and landscape, information was collected on the weather, their emotional state, and group dynamics on the day they visited to help determine if these factors affected the participants' experience of place. They were also asked if they had visited the park previously. Short follow-up interviews while on the course were conducted as necessary to clarify responses. All responses were self-reported.

The second phase of data collection took place at the end of the course. Participants were asked to 1) rank their top five most inspirational places (parks, monuments, natural areas) and describe why they found them to be inspirational; 2) rank order their three least inspirational places and describe why they did not find them to be inspirational; and 3) describe what landscape features or characteristics most inspired them. Since many of the parks, monuments, natural areas contained different types of landscapes, biomes, and ecosystems, participants were provided with a comprehensive list of the most prominent ones. They used this list to describe which ones they found most inspirational.

Data analysis employed a grounded theory approach, whereby theory emerged from the data (Corbin & Strauss, 1990). The words and phrases in the survey responses were analyzed for content which was subsequently used to construct themes. Data analysis on the 2017 group is ongoing. The two trip leaders/course instructors for the 2015 trip were also researchers for the study. One of the two trip leaders/course instructors for the 2017 trip was also a researcher. While this was helpful for insuring consistency in how the data was collected and interpreted, it also represented a potential source of bias. To increase trustworthiness of the findings, a third researcher not on the trip coded 20% of the data with a goal of 80% agreement or higher.

Results and Discussion

The top three most inspirational parks, as rated by the participants, were Zion, Grand Teton, and Badlands (2015) and Grand Teton, Yellowstone, and Yosemite (2017). Factors most often linked to inspiration included 1) vertical landscape features; 2) positive group dynamics and shared experiences; and 3) direct experience of the place (e.g., hiking, horseback riding). These factors support previous findings (Fredrickson & Anderson, 1999). Five of these parks represented places where students spent more time on the trip.

There were many individual landscape features that inspired students, but the most cited were canyons, faulted mountains, and volcanic mountains. The most cited quality was their "beauty", which inspired students to feel "a sense of awe" or "wonder." If inspiration is defined as "the process of being mentally stimulated to do or feel something," it could be said students were mentally stimulated by the "beauty" of "vertical spaces" to feel "a sense of awe." In addition, students often cited experiencing nature (hiking, tidepooling) and overcoming personal

challenges related to the landscapes as important inspiration sources. Other inspirational places, such as intertidal zones and the Lamar Plateau of Yellowstone, involved first experiences and unique interaction with wildlife. Horizontal landscape features such as open grasslands and plains received both positive (sublime) and negative (overwhelming) reactions.

This study adds to the literature on how humans experience natural landscapes and how those experiences inspire them emotionally, intellectually, and spiritually.

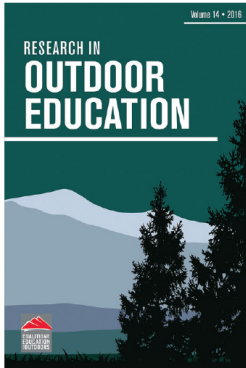
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