



Abstracts from the Coalition for
Education in the Outdoors
16th Biennial Research Symposium



YMCA Blue Ridge Assembly
Black Mountain, North Carolina
January 12-14, 2024

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Preface

Welcome to the 16th Biennial Coalition for Education in the Outdoors (CEO) 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. CEO was established in 1987 at the State University of New York (SUNY) at Cortland by a group of outdoor educators from around the United States. It served as 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 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*, which is available open source via SUNY Cortland at the CEO website. Indiana University's Bradford Woods was chosen as the site of the first symposium in 1992 and hosted the event through 2018.

Due to a series of unfortunate circumstances, including the COVID-19 pandemic, the 15th symposium was delayed until 2022. A reinvigorated research committee chose the YMCA's beautiful Blue Ridge Assembly in Black Mountain, North Carolina, as the host of the symposium and teamed with 2nd Nature TREC (Training, Research, Education and Consulting) to handle the administrative details. The 16th biennial symposium has returned to Blue Ridge Assembly and 2nd Nature TREC is serving as the symposium coordinators. The *Journal of Outdoor Recreation, Education, and Leadership (JOREL)* will again publish a Special Issue in late 2024 focusing on the 16th Biennial CEO Symposium.

The aim of the symposium is to assist outdoor educators in advancing the philosophical, theoretical, and empirical bases of outdoor education through several ways. First, the symposium enables scholars to present their work to one another and to others in the field. Second, the symposium fosters conversation and builds a community among researchers in outdoor education. Third, the symposium provides a forum to address areas of new or ongoing concern to researchers and scholars in outdoor education.

Thirty-two years after its inaugural meeting, the purpose of the CEO Research Symposium has remained the same. 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. It has maintained a loyal attendance drawing researchers from across the country and around the world eager to discuss a diversity of topics.

This year's symposium includes three special features. First, Jim Sibthorp from the University of Utah and Robert Lubeznik-Warner from the American Camp Association will host a pre-symposium session focused on Integrating Outdoor Education and Formal Schooling. Second, there will be an opening panel focused on Trends and Issues in Outdoor Education Research. Finally, we are pleased to announce the recipient of the CEO Graduate Student Research Scholarship: Michael Froehly (University of Utah), who was chosen from accepted abstracts with a graduate student lead author. This scholarship was funded by proceeds from the raffle held during the 2022 symposium. A similar raffle will be held at this symposium.

We owe thanks to many people who make this event possible. The authors are the ones who bring this program to life. Andrew Bobilya (Western Carolina University), Brad Daniel (2nd Nature TREC), Brad Faircloth (University of North Carolina-Asheville), and Sharon Todd (SUNY Cortland) helped organize and facilitate the program. Jim Sibthorp (University of Utah) developed and coordinated the pre-symposium session. The 2nd Nature TREC team and the Research Committee coordinated the review of abstracts. Finally, our thanks go to SUNY Cortland for supporting the Coalition for Education in the Outdoors by hosting the CEO website, providing open access to CEO's publications through the university's Digital Commons, and printing this abstract booklet.

Sharon Todd & Andrew Bobilya for the CEO Research Committee

Coalition for Education in the Outdoors Research Committee

Current Members

Pete Allison, The Pennsylvania State University
Andrew J. Bobilya, Western Carolina University
Laurie Browne, American Camp Association
Brad Daniel, 2nd Nature TREC
N. Qwynne Lackey, SUNY Cortland
Kendra Liddicoat, University of Wisconsin – Stevens Point
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Timothy O’Connell, Brock University
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Jim Sibthorp, University of Utah
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Christine Cashel, Oklahoma State University
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Michael Gass, University of New Hampshire
Karla Henderson, North Carolina State University
Leo H. McAvoy, University of Minnesota
Anderson B. Young, SUNY Cortland

Dear Attendees,

On behalf of 2nd Nature TREC (Training, Research, Education, Consulting), we welcome you to the 2024 Coalition for Education in the Outdoors Research Symposium! We are excited to be together again and hope that you enjoy your time at the beautiful YMCA Blue Ridge Assembly Conference Center. This location is close to Mt. Mitchell, the highest point east of the Mississippi River (6,684 feet), the Blue Ridge Escarpment (where the mountains drop 1400 feet to give way to Piedmont), the Great Smoky Mountains National Park, several wilderness areas (Linville Gorge, Shining Rock, Middle Prong, Joyce Kilmer-Slick Rock), and numerous whitewater rivers (Nantahala, French Broad, Chattooga, Ocoee, Nolichucky). While here, we hope you take the time to get out, take a hike, and enjoy the beauty that winter has to offer.

Sincerely,

Brad Daniel, *Executive Director*
Andrew J. Bobilya, *Director of Training and Education*
Brad Faircloth, *Director of Research*



Table of Contents

<i>Preface</i>	2
<i>Coalition for Education in the Outdoors Research Committee</i>	3
<i>Description of the Pre-Symposium Session</i>	6
<i>Graduate Student Research Scholarship Recipient</i>	7
<i>Symposium Schedule of Events</i>	8
<i>Research Presentation Session I</i>	
A Lack of Belongingness on an Outdoor Orientation Program.....	12
Discoveries for Wellbeing in and with the Project EXPLORE Community: Adventures in Emancipatory Design	15
A Mixed Methods Study of Staff Well-being at Summer Camp	17
The Role of Outdoor Adventure in First Year ROTC Orientation Programs	20
<i>Research Presentation Poster Session</i>	
Outdoor Academic Programs (OAPs) by the Numbers	23
Curating a New Meaning of Outdoor Adventure: (Re)thinking How We Represent #microadventure Content on Social Media	26
Turning the Classroom Inside Out: Supporting Elementary Teachers' Outdoor Learning	29
How Many Ways Can You Say Outdoor Education?	32
Barriers and Strategies for Utilizing School Outdoor Spaces: Exploring the Experiences of High School Teachers	35
<i>Research Presentation Session II</i>	
Effects of a Thematic Interpretive Day Camp Program on Children's Environmental Attitudes	39
Incorporating Citizen Science in Elementary Schools: Teacher and Student Experiences with Outdoor Learning	42
Influence of Childhood Connection to Nature on India's Outdoor Professionals	45
The Impact of an Intergenerational Citizen Science Program	48
<i>Research Presentation Session III</i>	
Comparing the Differences Between High and Low-Point Narratives in Outdoor Adventure Education	51
Exploring the Role of Recreation in Rural NH Youth's Engagement with Master Narratives	55
Inspiration in the Galapagos Islands: Characterizations of Awe, Wonder, and Sublimity	58
Multiple Perspectives of Inspirational Instruction in Outdoor Recreation: A Phenomenological Study	60

Research Presentation Session IV

The Impact of Adventure Education on Cognitive Flexibility and Intolerance to Uncertainty	63
Eco-Anxiety of College Students in an Introductory Environmental Science Course	66
Forms of Character Across Cultures: Initial Analysis from a Global Survey of Outward Bound Schools	69
A Cultural Risk Assessment of Led Outdoor Activities	72

Research Presentation Session V

It is So Much More Than Just a Four-Day Residential: The Profound Effects of Supporting Young People Experiencing Homelessness to Thrive in the Outdoors.....	75
The Relationship of Childhood Outdoor Experience and Gender with College Students’ Initial Levels of Outdoor Program Outcomes and Subsequent Changes over Time	78
Gender Differences in Appalachian Trail Thru-Hikers	82
Could We Lose Access to Our Classrooms? A Data-based Discussion About Land Management Decisions that Limit Access to Protected Areas	85
<i>JOREL Special Issue: Call for Papers</i>	88

Description of the Pre-Symposium Session

Integrating Outdoor Education and Formal Schooling: Learning from the Present and Looking to the Future

Facilitated by Jim Sibthorp (University of Utah) & Robert Lubeznik-Warner (American Camp Association)

While outdoor education is not new, widespread, system-level adoption of outdoor education remains uncommon in the United States. The fragmented nature of outdoor education in the U.S. has led to inequitable access despite promising local efforts to offer equal opportunities to all youth. This pre-conference will showcase ways outdoor education has been incorporated into formal schooling, including state-level funding for outdoor and environmental education grants, district-level partnerships, camp-school partnerships, nature-focused schools, and examples from abroad. How can we learn from these present-day examples to expand outdoor education opportunities across the U.S.?

Schedule

Time	Who	What
9:00-9:15	Jim Sibthorp & Robert Lubeznik-Warner	Overview, Welcome, Set-up for the Day
9:15-9:35	Pete Allison	International Perspectives on Leveraging Outdoor Education: Examples from Scotland and Singapore
9:35-9:55	Kendra Liddicoat	Learning Outdoors at Wisconsin's School Forests since 1928
9:55-10:15	Lisa Meerts	Integrating Summer Camps and Schools through Formal Partnerships
10:15-10:30	Bio Break	
10:30-10:50	Bea Armstrong	North Carolina Outward Bound School's Partnerships with Local Schools
10:50-11:10	Michelle Pearce	The Landscape of Environmental Education in the Southeast
11:10-12:00	Jim Sibthorp & Robert Lubeznik-Warner	Guided Discussion: Future Directions and How Can We Expand Outdoor Education Opportunities for Youth through School Partnerships

Michael Froehly, Recipient of the CEO Graduate Student Research Scholarship



Michael Froehly is a current PhD Candidate in Parks, Recreational and Tourism, and a graduate teaching and research assistant at University of Utah in Salt Lake City, Utah. He received two B.S. degrees in Adventure Education and Leadership and Adventure Therapy from Unity College, and M.S. degree in Natural Resources and Environmental Education from University of Idaho. He is also Senior Field Faculty at the National Outdoor Leadership School (NOLS) and has been instructing backpacking, climbing, mountaineering, canyoneering, winter programs, and custom leadership courses for NOLS since 2014. Michael began his PhD at the U of U in 2020 to pursue research on the learning and development that happens within the out-of-school time context. He is especially interested in the lasting impacts of outdoor adventure

education programs, and how people integrate these experiences into who they are and who they want to become. He is grateful for the guidance of the University of Utah's Parks, Recreation and Tourism faculty, and ongoing partnership with NOLS.

Michael's abstract, "Comparing the Differences Between High and Low-Point Narratives in Outdoor Adventure Education," is co-authored by Jim Sibthorp, Robert Paul Lubeznik-Warner, Lisa Meerts-Brandsma (University of Utah), and Shannon Rochelle (NOLS). Chosen as the top-rated abstract in a blind review of accepted abstracts with a graduate student as the lead author, Michael's presentation is scheduled for Session 3, which begins at 10:45 a.m. on Saturday, January 13th.

2024 CEO RESEARCH SYMPOSIUM SCHEDULE OF EVENTS

Thursday, January 11, 2024

3:00-6:00 p.m. CEO Pre-Symposium & Early Arrival Registration – *Blue Ridge Center Lobby*
(rooms are not available until after 3 pm; early arrivals are welcome to enjoy the YMCA property)

6:00 p.m. Dinner – *Blue Ridge Center Dining Hall*

*Note: There is no CEO programming on Thursday evening. Early arrivals are encouraged to enjoy the YMCA property and nearby towns of Black Mountain, Old Fort, and Asheville.

Friday, January 12, 2024

8:00 a.m. Breakfast for Thursday Night Lodging Guests – *Blue Ridge Center Dining Room*

8:00-2:00 CEO Registration – *Blue Ridge Center Lobby*

9:00-12:00 Pre-Symposium Session – *Blue Ridge Center Robertson Room 1*

Integrating Outdoor Education and Formal Schooling: Learning from the Present and Looking to the Future

Facilitated by Jim Sibthorp (University of Utah) & Robert Lubeznik-Warner (American Camp Association)

While outdoor education is not new, widespread, system-level adoption of outdoor education remains uncommon in the United States. The fragmented nature of outdoor education in the U.S. has led to inequitable access despite promising local efforts to offer equal opportunities to all youth. This pre-conference will showcase ways outdoor education has been incorporated into formal schooling, including state-level funding for outdoor and environmental education grants, district-level partnerships, camp-school partnerships, nature-focused schools, and examples from abroad. How can we learn from these present-day examples to expand outdoor education opportunities across the U.S.? **Panelists:** Pete Allison, Kendra Liddicoat, Lisa Meerts-Brandsma, Robert Lubeznik-Warner, Bea Armstrong, Michelle Pearce

12:30 p.m. Lunch for Pre-Symposium and Thursday Night Guests – *Blue Ridge Center Robertson Room 2*

2:00 Meet and Greet – *Blue Ridge Center Region Room* (Facilitated by Brent Bell)

2:30 Opening Session – *Blue Ridge Center Region Room*

Welcome (Brad Daniel)

Site Logistics & Symposium Overview (Andrew Bobilya)

Land Acknowledgement (Sky N. Sampson; Secretary of Community, Education and Recreation Division; Eastern Band of Cherokee Indians)

History of the CEO Research Symposium (Sharon Todd & Alan Ewert)

3:00 Panel Discussion: Trends in Outdoor Education Research

Moderator: Brad Daniel

Kellie Gerbers, Association for Outdoor Recreation and Education Research Symposium (AORE)

Scott Morrison, Chair, North American Association for Environmental Education Research Symposium (NAAEE)

Jayson Seaman, Former Editor-in-Chief, *Journal of Experiential Education (JEE)*

Anja Whittington, Associate Editor, *Journal of Outdoor Recreation, Education, and Leadership (JOREL)*

Ryan Zwart, Co-Chair, Symposium for Experiential Education Research (SEER)

4:00 Research Presentation Session I – *Blue Ridge Center Region Room (Jill Overholt, Presider)*

A Lack of Belongingness on an Outdoor Orientation Program

Brent J. Bell (University of New Hampshire), Jori Horner (Kalamazoo College), Trevor Guilmette (University of New Hampshire), Katriana Kivari (University of New Hampshire)

Discoveries for Wellbeing in and with the Project EXPLORE Community: Adventures in Emancipatory Design

Jen Knight (Western Carolina University), Callie Schultz (Western Carolina University), Paul Stonehouse (Western Carolina University), Joy Howard (Western Carolina University), Corey Johnson (North Carolina State University)

A Mixed Methods Study of Staff Well-being at Summer Camp

Robert P. Lubeznik-Warner (American Camp Association), Taylor Wycoff (American Camp Association), Laurie P. Browne (American Camp Association)

The Role of Outdoor Adventure in First Year ROTC Orientation Programs

John Henkelman (University of New Hampshire), Brent Bell (University of New Hampshire), Jessie Bennett (University of New Hampshire), Forrest Schwartz (University of New Hampshire)

5:40 Poster Presenters Two-Minute Introduction (Brad Daniel, Presider)

6:00 Dinner – *Blue Ridge Center Robertson Room 2*

7:00 Poster Session and Evening Social – *Blue Ridge Center Region Room*

The Friday Night Social will include dessert, beer, wine and soda.

Sponsored by: Association for Experiential Education

Outdoor Academic Programs (OAPs) by the Numbers

Brent Bell (University of New Hampshire), Kellie Gerbers (Westminster College), Jeff Turner (Georgia College), Jeremy Jostad (Eastern Washington University), Will Hobbs

Curating a New Meaning of Outdoor Adventure: (Re)thinking How We Represent #microadventure Content on Social Media

Kayler Debrew (Western Carolina University), Callie Schultz (Western Carolina University), Paul Stonehouse (Western Carolina University), Vincent Russell (Western Carolina University), Luc Cousineau (Dalhousie University)

Turning the Classroom Inside Out: Supporting Elementary Teachers' Outdoor Learning

Stephanie Fiocca (North Carolina State University), Sarah Carrier (North Carolina State University), Jill McGowan (North Carolina State University)

How Many Ways Can You Say Outdoor Education?

Denise Mitten (Prescott College), Soumya Mitra (Prescott College)

Barriers and Strategies for Utilizing School Outdoor Spaces: Exploring the Experiences of High School Teachers

Erin Waddell (Western Carolina University), Andrew J. Bobilya (Western Carolina University), W. Brad Faircloth (UNC Asheville), Brad Daniel (2nd Nature TREC), Ashley Hoffman (Kentucky Association for Environmental Education; Southeastern Environmental Education Alliance)

Saturday, January 13, 2024

8:00 a.m. Breakfast – *Blue Ridge Center Robertson Room 2*

**8:45 Research Presentation Session II – *Blue Ridge Center Region Room (Paul Stonehouse, *President*)
Arrange and Announce Lunch Breakout Groups (Brad Daniel)***

Effects of a Thematic Interpretive Day Camp Program on Children’s Environmental Attitudes
Griffin S. Bray (University of Wisconsin Stevens Point), Rebecca L. Franzen (University of Wisconsin Stevens Point), Laura E. Anderson (University of Wisconsin Stevens Point)

Incorporating Citizen Science in Elementary Schools: Teacher and Student Experiences with Outdoor Learning

Sarah J. Carrier (North Carolina State University), Jill McGowan (North Carolina State University)

Influence of Childhood Connection to Nature on India’s Outdoor Professionals
Soumya Mitra (Prescott College), Denise Mitten (Prescott College)

The Impact of an Intergenerational Citizen Science Program

Ryan Zwart (Montreat College), Dorothea K. Shuman (Montreat College)

10:30 Refreshment Break

10:45 Research Presentation Session III – *Blue Ridge Center Region Room (Dan McCole, *President*)*

Comparing the Differences Between High and Low-Point Narratives in Outdoor Adventure Education

Michael Froehly (University of Utah), Jim Sibthorp (University of Utah), Robert Lubeznik-Warner (University of Utah), Lisa Meerts-Brandsma (University of Utah), Shannon Rochelle (NOLS)

Exploring The Role of Recreation in Rural NH Youth’s Engagement with Master Narratives Katelyn A. Moscouver (University of New Hampshire), Jayson Seaman (University of New Hampshire), Cindy Hartman (University of New Hampshire), Andrew Coppens (University of New Hampshire)

Inspiration in the Galapagos Islands: Characterizations of Awe, Wonder, and Sublimity

Jim Shores (Asbury University), Brad Daniel (2nd Nature TREC), W. Brad Faircloth (UNC Asheville)

Multiple Perspectives of Inspirational Instruction in Outdoor Recreation: A Phenomenological Study

Joshua Pighetti (Penn State University), Pete Allison (Penn State University)

12:30 p.m. Lunch and Free Time – *Blue Ridge Center Robertson Room 2*

CEO Research Committee – please meet in the Robertson Room 1 for committee meeting

2:00 Research Presentation Session IV– *Blue Ridge Center Region Room (Michael Froehly, *President*)*

The Impact of Adventure Education on Cognitive Flexibility and Intolerance to Uncertainty
Alan Ewert (Indiana University); Curt Davidson (University of Wyoming)

Eco-Anxiety of College Students in an Introductory Environmental Science Course

Kendra R. Liddicoat (University of Wisconsin Stevens Point), Becca L. Franzen (University of Wisconsin Stevens Point), Laura E. Anderson (University of Wisconsin Stevens Point)

Forms of Character Across Cultures: Initial Analysis from a Global Survey of Outward Bound Schools

Kimia Shirzad (Penn State University), Pete Allison (Penn State University), Theresa Melton (Clemson University), Jim Sibthorp (University of Utah), Sarah Wiley (Outward Bound International)

A Cultural Risk Assessment of Led Outdoor Activities

Stuart Slay (Student Conservation Association), Clare Dallat (Risk Resolve), Denise Mitten (Prescott College)

3:45 Group Photo – *Outside Blue Ridge Center*

4:00 Refreshment Break

4:15 Research Presentation Session V – *Blue Ridge Center Region Room (Curt Davidson, President)*

It is So Much More Than Just a Four-Day Residential: The Profound Effects of Supporting Young People Experiencing Homelessness to Thrive in the Outdoors

Benjamin Parry (Clemson University), Jennifer Cumming (University of Birmingham), Janice Thompson (University of Birmingham), Mark Holland (Newman University), Mary Quinton (University of Birmingham)

The Relationship of Childhood Outdoor Experience and Gender with College Students' Initial Levels of Outdoor Program Outcomes and Subsequent Changes over Time

Sharon L. Todd (SUNY Cortland)

Gender Differences in Appalachian Trail Thru-Hikers

Anja Whittington (Radford University), Jeffery Aspelmeier (Radford University), Jay Raymond (West Virginia University Institute of Technology)

Could We Lose Access to Our Classrooms? A Data-Based Discussion About Land Management Decisions That Limit Access to Protected Areas

Dan McCole (Michigan State University), Elizabeth E. Perry (Michigan State University), Andrew J. Bobilya (Western Carolina University), Madison Janes (Michigan State University)

6:00 Dinner – *Blue Ridge Center Robertson Room 2*

7:00 Raffle Drawings & Symposium Wrap Up – *Blue Ridge Region Room*

Journal of Outdoor Recreation, Education and Leadership (JOREL) CEO Special Issue

Guest Editors: Lisa Meerts-Brandsma, Kendra Liddicoat, N. Qwynne Lackey
Symposium Summary and Evaluation (2nd Nature TREC)

8:00 Evening Social – *Blue Ridge Center Lobby and Outdoor Campfires in Front of the Center*

The Saturday Night Social will include live music, hors d'oeuvres, beer, wine and soda.

Sponsored by: Landmark Learning and Alpenglow Education

Sunday, January 14, 2024

7:00 – 9:00 a.m. Continental Breakfast – *Blue Ridge Center Lobby*

A Lack of Belongingness on an Outdoor Orientation Program

Brent J. Bell, University of New Hampshire
Jori Horner, Kalamazoo College
Trevor Guilmette, University of New Hampshire
Katriana Kivari, University of New Hampshire

Background

When Baumeister and Leary published the Belongingness Hypothesis (1995), they laid out a compelling theoretical framework arguing that the central/core motivation of humans is a need for belongingness, or to frame more simply—people need friendships. This need for friends to provide a sense of belonging is most important during social transitions (Weiss, 1974). People in transition commonly experience loneliness, motivating them to take social risks to establish new human connections. Weiss (1974) theorized six transitional provisions needing to be satisfied for a successful transition: Attachment, guidance, tangible support, social integration, competence, and nurturance. These needs are often met through friendships. For students transitioning to a college, they enter an environment with a need to develop these supportive friendships. This friendship development has been found to be vitally important for student retention (Austin, et al., 2009, Bell, 2005, Bell & Chan, 2017). In fact, the greatest fear of students during transition to college is reported to be a fear of not developing friendships, much more than a fear of academics (Bell & Williams, 2006). Supportive friendship development is vitally important in creating a positive college experience.

Outdoor orientation programs (OOPs) are well researched experiences accelerating friendship formation (Austin, et al., 2009; Devlin, 1996). These programs have also been shown to provide increases in Weiss's social provisions (Bell, 2005). OOPs are defined as small group adventure experiences (less than 15 people) facilitated by peer leaders that spend at least one night camping away from campus (Bell, 2005). In 2019, 212 outdoor orientation programs were operating at colleges and universities in the United States (Bell, 2022). Research of outdoor orientation programs includes evidence of positive impacts on student retention (Bell & Chang, 2017) and increased grade point averages (Stogner, 1978; Gass, 1987). Researchers also report many students consider their outdoor orientation as one of the most important experiences of their lives (Bell & Holmes, 2011).

Although the research on the success of outdoor orientations is positive, not all students report a successful outdoor orientation experience resulting in belongingness. According to The Outdoor Orientation Benchmarking Survey (TOOBS), a national survey of outdoor orientation programs, 1-2% of participants each year report a lack of belongingness (TOOBS, 2020). In this study, researchers sought to understand why some participants did not develop a sense of belongingness. Although the reports of low belongingness were relatively small, any lack of belongingness is likely to be highly consequential. Low belongingness is associated with dropping out, stopping out, or transferring to another college. For example, a lack of belongingness in classes has been shown to have downstream effects on the retention of women and under-represented groups in the STEM field (Fink, Frey, & Solomon, 2020).

Method

The participants for this study were all first-year students who had participated in an outdoor orientation program and completed the TOOBS survey. Participants reporting low belongingness were presented an invitation to participate in a further study. The students who replied received consent documents and a Zoom link for a research interview. The interviewer used a semi-structured interview technique.

The research team assessed the data utilizing a Generic Qualitative Analysis (GQA) (Percy et al., 2015). This qualitative approach focused on how a lack of belongingness was experienced and perceived by students during their college transition. The GQA was an appropriate process of inquiry for assessing a person's reflections upon an experience.

Results

The lack of belongingness reported by the participants ($N = 13$) stemmed from a variety of factors. A few descriptions of the student experiences are reported below:

1. An international student who was shy and did not connect with students' discussions about music and popular culture. She was not encouraged to speak out and felt ignored in her group.
2. Student from Hawaii who reported culture shock. She missed the diversity of her home city. Her group spoke of common experiences she did not share, such as talks about summer camp and eating foods like ham sandwiches.
3. Student with previous experience hiking who thought the trip should be more physically demanding (including longer mileages). He hiked at the front, covered mileage easier, and did not connect with the group who hiked slower.
4. Person of color who was part of an orientation group that camped with another group (combined groups = 27 participants). Student felt shy and retired early to her tent, but then realized no one cared that she was gone, i.e., did not check on her. She started to isolate from the group and laid in her tent alone feeling awkward while listening to the group laughing without her. She felt isolated and did not know how to bridge the growing social gap.
5. A male student who had some previous outdoor experience and felt that he was in a power struggle with the leaders. The leaders were not enthusiastic to be leading and did not provide reflective time where conflicts could be discussed. He withdrew from the leaders, and then later from the participants, trying to avoid being a scapegoat.

Discussion

From all the interviews ($N = 13$), some themes emerged:

1. The expectations of the participants varied widely, but all shared that the trip was not what they expected. Expectations need to be managed when possible, and when they are not met, leaders need to recognize this can threaten belongingness.
2. Social discussions in the interstitial spaces on a trip can be isolating to participants if they do not share common experiences with the majority of the group.
3. All but one participant shared a perception that their voice was not often heard resulting in feelings of being undervalued or overlooked.
4. Leaders have influence over the group and the power dynamics. The way leaders use their power was a major contributor to lack of belongingness among seven of the 13 interviews. Students reported that even small, dismissive actions, had a big impact on their sense of belonging.

To be in a group and not feel you belong is a difficult experience. On an outdoor orientation trip, students reported feeling stuck and hoping for the trip to end. This study hopes to contribute to the understanding of how belongingness can be fragile and needs attention from leaders of outdoor orientation programs.

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Discoveries for Wellbeing in and with the Project EXPLORE Community: Adventures in Emancipatory Design

Jen Knight, Western Carolina University
Callie Schultz, Western Carolina University
Paul Stonehouse, Western Carolina University
Joy Howard, Western Carolina University
Corey Johnson, North Carolina State University

Background

Project EXPLORE (PEX) is a nature-based learning (NBL) program designed by the NC Arboretum to help North Carolina K–12 teachers implement community or citizen science-based curricula in their classrooms. Teachers in the program receive materials and on-site coaching to facilitate the NBL curricula. PEX and similar programs are part of ongoing efforts to reconnect youth with the natural environment through formal curriculum initiatives (Chawla & Jordan, 2019; Williams & Dixon, 2013). Despite successes, many real and perceived barriers prevent the broader adoption of nature-based learning (NBL) in public education systems (Oberle et al., 2021; Waite, 2020). Teachers' lack of confidence has been identified as particularly critical to mainstream implementation (Chawla & Jordan, 2019).

Furthermore, classroom stress and teacher attrition are symptoms of a crisis in teacher wellbeing, factors that negatively impact students (Lever et al., 2017). Pertinent to this study, teacher stress and burnout may be mitigated by the same positive outcomes of NBL that students experience—like improved student-teacher relationships (Toropova et al., 2021), emotional regulation (Williams & Dixon, 2013), and improved motivation (Dettweiler et al., 2017). Finally, few studies take *teachers'* wellbeing or their perceptions of nature restorativeness into account.

This study considers if we promoted outdoor education as much for *teachers'* wellbeing as for students', whether more teachers may be willing to incorporate these practices. The purpose of this study is to explore how participating in PEX impacts teachers' "wellbeing." I specifically investigate how participating in Project EXPLORE impacts teacher wellbeing and what Project EXPLORE experiences teachers associate with their sense of wellbeing.

Methods

Informed by critical feminist theory, I use an amended two-part collective memory work (CMW) design. The methodology 1) maximizes accessibility for already overburdened teachers, 2) empowers them to identify impacts to their wellbeing, and 3) allows them to develop and participate in solutions. The collaborative process of CMW centers individual experience and reality while also locating these within societal and cultural contexts (Johnson, 2018). Rather than typical written narratives, I invite all former PEX participants to share a short video narrative about a memory of the program's impact on their wellbeing. Next, I edit the videos into a single compilation. All participants who submitted videos are invited to become co-researchers and join the virtual focus group.

As with traditional CMW, co-researchers analyze the video diary entries for meaning. Prior to the focus group meeting, teachers who opted-in to participate as co-researchers watched the submissions of all the other co-researchers participating in the focus group. They also viewed the video compilation of all submissions. Following this review, the co-researchers formulated 1-2 questions or prompts to guide the groups' discussion and analysis.

Reviewing narratives provided by individuals not participating in the focus group analysis is a departure from typical CMW procedure (Johnson, 2018). Nevertheless, I seek to include these testimonies in an effort to involve as many teachers' voices as possible. I do this recognizing that many teachers will be unable to participate, regardless of desire, due to chronic fatigue, burnout, overwork, depression, and anxiety (AFT, 2022). In the spirit of the emancipatory nature of CMW, I want to give teachers an accessible way to participate in this research, even if it means compromising the "purity" of the design.

Results and Discussion

Within CMW, both the narratives and the group analysis are considered “data” as meanings are made through deconstruction, reflection, and dialogue (Haug, 1999; Johnson, 2018). Unlike most methodologies, the focus group participants are referred to as “co-researchers” and are an integral part of the data analysis process (occurring during the focus group) along with the primary researcher. Therefore, in this presentation, I will share highlights from both the video narratives and group analysis. Beyond knowledge creation alone, the goals of participatory action research like CMW are the pursuit of knowledge that actively empowers the community of study to transform (Parry & Johnson, 2016). For the voices of this community to be heard and have power, it is critical that our findings are represented in a way that is accessible and readily put to work. Therefore, the results preserve teachers’ voices, words, and gestures in an accessible video format. Informed by Davies (1992), I plan to create a full summary of the analysis that is a more approachable, actionable presentation of research than traditional academic writing. The exact form of this summary will come out of the focus group analysis.

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A Mixed Methods Study of Staff Well-being at Summer Camp

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Background

Summer camp is one type of seasonal outdoor education employment that can have positive outcomes for emerging adult staff (Duerden et al., 2014); however, the work can be emotionally intense (Baker, 2020) resulting in burnout (Bailey et al., 2012; Wahl-Alexander et al., 2017) and emotional stress (Povilaitis et al., 2022). These emotional demands and stressors may be compounded by recent decreases in emerging adults' well-being (U.S. Public Health Service, 2021) and caring for youth who are also experiencing decreased well-being (Sanford & Zupanich, 2022).

Basic needs theory, a sub-theory of self-determination theory (Ryan & Deci, 2000), suggests that environments enhance well-being when they provide individuals with opportunities to feel independent (autonomy), capable and needed (competence), and cared for by others (relatedness). These basic needs align with many of the characteristics of camp employment that afford positive outcomes for emerging adult staff, such as a supportive social environment among coworkers (Duerden et al., 2014) and opportunities to make a difference (Lubeznik-Warner et al., 2023). It is plausible, then, that these camp employment characteristics previously linked to developmental outcomes also may promote staff well-being. Given the increased need to nurture emerging adult and youth well-being, and the link between staff and campers' experiences (Lubeznik-Warner & Rosen, 2023; Owens & Browne, 2021), it is important to identify the characteristics of camp that support emerging adult staff's well-being. To this end, we used a convergent mixed methods design to examine the relationships between staff well-being and common characteristics of camp employment.

Methods

To answer our research question, we used quantitative and qualitative survey data collected from camp staff at the end of summer 2023. The initial recruitment of camps occurred in April 2023. We asked emerging adult staff (ages 18–29) about their camp employment (i.e., day/overnight, past camp employment, weeks worked), demographics (i.e., age, gender, race), well-being (WHO-5; Topp et al., 2015), job impact (Grant et al., 2007), belonging (Panorama, 2016), and if their camp offered a mental health training (yes/no). Reliability was sufficient for all scales ($\alpha = .79 - .89$). We also asked staff to identify what supported/harmed their well-being while working at camp and why (laddered open-ended questions). We collected pre-camp data; however, only 33 participants provided responses at both time points. Therefore, we analyzed and presented these data for exploratory purposes only.

Although staff responses are nested within camps ($n = 21$), the amount of between-camp variance did not warrant multilevel modeling ($ICCs < .04$). Therefore, to analyze the quantitative data, we conducted a hierarchical regression with well-being as the outcome. In order to isolate the effects of job impact and belonging on well-being, we included age, gender (female = 1), race (POC = 1), past camp employment (yes = 1), programming type (overnight camp only = 1), weeks worked at camp, and well-being training as covariates in step 1. We included job impact and sense of community as our primary predictors of interest in step 2. Given our matched data, we also examined the effect of belonging and job impact on post-summer well-being controlling for pre-summer well-being; however, given the small sample size and exploratory nature of this analysis, we used a more liberal $\alpha = .1$ to limit Type 2 error, thus making these results tentative. Our analysis of the open-ended qualitative data utilized Braun and Clarke's (2006) six-phase approach for inductive thematic analysis to remain open to potential characteristics of camp employment that support or harm staff well-being.

Results

A total of 147 staff ($m_{\text{age}} = 20.93$ years old; $SD = 2.36$) provided responses. Most staff identified as white (86%) and nearly two-thirds identified as women (63%). About 44% of staff said it was their first summer working at a camp and 78% of staff reported working at a camp that offered overnight programming only. Staff worked at camp in 2023 for an average of 9 weeks ($SD = 2.27$).

We found that staff who reported high job impact and belonging also reported higher well-being at the end of camp. Staff who worked at overnight-only camps reported lower well-being than staff who worked day camp or combination day/overnight camps. See Table 1 for all cross-sectional regression predictor coefficients.

Table 1. Cross-Sectional Regression Predictor Coefficients^a

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Age	-.01	.03	-.03	-.39	.69
POC	.15	.22	.05	.70	.49
Female	-.18	.15	-.09	-1.21	.23
Weeks Worked	-.04	.03	-.10	-1.28	.20
Overnight Camp	-.41	.17	-.18	-2.36	.02
Mental Health Training	.24	.23	.08	1.08	.28
Job Impact	.24	.11	.17	2.13	.04
Belonging	.51	.10	.42	4.98	<.001

Note. ^a For brevity, and given the significant ΔR^2 (.21, $F(2, 127) = 20.02$, $p < .001$) from Step 1 (only covariates), we only report the coefficients from Step 2 in this table.

When also controlling for pre-summer well-being (in the matched sample), we found that staff who reported higher belonging ($\beta = .60$, $p = .001$) and staff who reported participating in a mental health training ($\beta = .55$, $p = .006$) also reported higher well-being at the end of camp compared to their peers (Step 2: $\Delta R^2 = .37$, $F(2, 22) = 13.43$, $p < .001$). Other predictors were not related to post-summer well-being when controlling for pre-summer well-being.

Our analysis of the open-ended responses suggests that staff's relationships with others (e.g., coworkers ($n = 66$), leadership ($n = 19$), and having access to camp mental health professionals and breaks ($n = 13$) supported their well-being. Staff responses suggested that the intense work environment (e.g., long hours, few breaks ($n = 18$), lack of administrative support/communication ($n = 17$), and co-worker conflict ($n = 20$) harmed their well-being.

Discussion

These findings extend previous research about the camp staff experience by identifying characteristics of camp employment that support and harm staff well-being. Our findings across the cross-sectional and matched pre-post quantitative data, as well as the qualitative open-ended data, provide convergent evidence suggesting that establishing a supportive staff culture is important to staff well-being at camp. Further, the pre-post data and qualitative data suggest that offering mental health training and providing staff sufficient breaks and access to mental health resources at camp supports well-being. Administrators should consider strategies to buffer the effects of the intense job demands inherent to working at a camp and focus on creating robust relationships with frontline staff. The brevity of our open-ended qualitative survey data, mostly homogenous cross-sectional sample, and small matched sample are limitations worth considering. Future research should strive to have larger, more representative samples and more in-depth qualitative data to extend the generalizability and robustness of the present study's findings.

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The Role of Outdoor Adventure in First Year ROTC Orientation Programs

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Introduction

The recruiting and retainment needs of the United States military has not been met in several years, especially within reserve units. This is problematic since most reserve officers enter the United States (U.S.) Army and U.S. Air Force (USAF) through on campus Reserve Officer Training Corps (ROTC) programs. Due to a reducing number of recruits, greater attention is being focused on ROTC programs to increase retention and retainment.

Outdoor Orientation Programming (OOP) provides increases in first-year student's sense of trust and belonging which have linked to increases in academic achievement (Gass, 1990), social well-being (Boyd & Richerson, 2009; Brewer, 2007; Slavich, 2020) and retention (Bell & Chang, 2017). These OOPs programs may increase retention to ROTC. The purpose of this exploratory survey study is to understand if orientation programming may play a role in a ROTC cadets' sense of belonging and trust, factors associated with increased retention (Bell & Chang, 2017).

Fiske (2009) reports that belongingness is the most foundational of all human motivations, followed by trust, self-enhancement, control, and understanding. Belongingness is associated with academic and social wellbeing of incoming first-year college students; however, it is complex and nuanced. It is not known how cadets interact with a sense of belonging or how ROTC orientation programs perform in reference to Fiske's core motivations. This study explores this gap in knowledge.

Literature Review

The importance of trust and belongingness in human relationships is well established (Baumeister & Leary, 1995; Gillespie, 2003), and of interest to military units. Trust is a multi-factor concept composed of: (a) reliance trust: following through on commitments, and (b) disclosure trust: confidentiality with interpersonal information. For example, a person may have a friend with whom they trust to keep a secret (disclosure trust), but not trust to show up on time (reliance trust). Although trust is typically thought of as a willingness to be vulnerable, it is more nuanced, especially within a military unit where soldiers may be asked to trust others in a highly consequential environment. Within these two definitions is the underlying willingness of an individual to be vulnerable in a relationship (Gillespie, 2003) which is a key attribute of developing a sense of belongingness.

Belongingness is also a complex concept. This study utilizes the conceptual framework offered by Allen et al. (2021) which frames belonging into four components, (a) competencies; (b) opportunities; (c) motivations; and (d) perceptions; all overlying the social, cultural, environmental, and temporal contexts and experiences. Belongingness is particularly important in transitions, such as entering college or the military, where individuals may enter a new social role without any current social connections.

An associated and growing body of research focusing on the transition of young people from high school to college may be relevant to the transition to ROTC. Bell et al. (2010) defines OOP as having three criteria: (a) students participate in adventure activities, (b) in small groups of 15 participants or less, and (c) spend at least one night away from campus. This research shows OOPs can foster the creation of supportive relationships with others, leading to strong bonds that last beyond OOP programming, with trust and belonging playing a role in this process (Bell et al., 2010; Bell & Nafziger, 2014). This idea of creating strong cohesive teams within backcountry landscapes demonstrates a potential meshing of outdoor orientation programming with the goals of ROTC orientation programming – fostering an environment for first-year cadets to bond and build strong interpersonal relationships amongst their cohort may help in their academic and professional careers.

The purpose of this study is twofold: (a) provide insight into a cadet's sense of belonging and trust through the transition from high school into college, and (b) compare modalities of orientation programming. These results will help support ROTC commanders and university administrators in making metric-based adjustments to programs to help improve cadet's sense of trust and belonging within their ROTC program and academic institution.

Method

In this study the participants are U.S. Army or USAF ROTC cadets enrolled in universities located in the Northeastern United States. Each ROTC program conducts their orientation programming with few (USAF) to partial (US Army) components aligning with OOP. ROTC participants will be surveyed via the annual OOP survey (The Outdoor Orientation Benchmarking Survey [TOOBS]; Bell et al, 2021). Within this survey there are multiple embedded measures including: Student Belongingness Scale (SBS) (Sotardi et al., 2021), the Behavioral Trust Inventory (BTI; Gillespie, 2003) and Adventure Belongingness Scale. Results will be examined utilizing a causal-comparative quantitative experimental design (Creswell & Creswell, 2018). The quantitative survey results will be analyzed using the Statistical Package for the Social Sciences (SPSS, IBM). Analysis of covariance will be conducted to compare the modalities (U.S. Army, USAF, and OOP) to test for significant differences within the development of belongingness and trust through orientation.

Results

The results will be presented in January 2024. Current literature has found that: (1) many ROTC programs operate as separate entities on college campuses resulting in cadets feeling isolated from the general student body (Moore & Swick, 2018), and (2) some ROTC units participate in orientation programming that is organized within direct command and not standardized regionally or nationally. These ROTC specific orientation programs are often administered independently and in conflict with other school orientation programs, potentially minimizing the importance of developing a sense of belonging to the college or to other students outside of their ROTC program that may influence retention.

Discussion

The design of OOP may provide a road map for ROTC programs to help create team cohesion through belongingness and trust (Bell & Holmes, 2011). As highlighted in Bell et al. (2021) study, OOP are associated with increased student retention (Bell & Chang, 2017), social support (Bell, 2006), self-efficacy (Fields, 2010; Jones & Hinton, 2007) and life effectiveness (Frauman & Warywold, 2009). The results of this study will better inform ROTC command and academic institutions regarding the impact of orientation programs on ROTC cadets' sense of trust and belonging across programs.

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Outdoor Academic Programs (OAPs) By the Numbers

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Background

Little comprehensive research has been conducted looking at outdoor academic programs (OAPs) within the United States. This study builds upon findings of a previous study conducted by Bell et al. (2017) that found 96 academic outdoor leadership programs in the United States and surveyed 62 programs in 2017. This research team set out to complete a census of all undergraduate OAPs throughout the United States to understand 1) how many OAPs existed in the U.S. and 2) which higher education institutions offered OAPs (Phase 1). The next phase of this research surveyed OAPs to better understand both the current state of programs and trends that might be present from 2017 to 2023 (Phase 2). The research team found evidence of trends important for discussion related to supporting and sustaining the academic field.

Methods

After identifying 128 OAPs utilizing a census method in 2021 (Bell et al., 2023; Turner et al., 2022), the research team developed an online survey to better understand the structure, content, opportunities, and limitations of OAPs. The finalized survey was sent to 128 OAPs institutional contacts in May, 2023 and concluded October 1, 2023. Survey data was collected from 91 OAPs including one OAP that was missed by the 2021 census and one institution offering two unique OAPs. Fifteen other OAPs were eliminated since the 2021 census. This represents an 81% response rate which composed the data set for comparing programs.

Results & Discussion

Number of Outdoor Academic Programs

The survey results suggest that the number of OAPs grew by 33% between 2017 when Bell et al. (2017) identified 96 unique OAPs and 2021 when Turner et al. (2022) identified 128. Conversely, the number of OAPs decreased by 14% between 2021 and 2023. The increase in programs between 2017 and 2021 may be attributed to the increased efficacy of the census method employed in 2021. Similarly, the decrease between 2021 and 2023 may partially be attributed to COVID-19 and a lag between the decision to eliminate an academic program and the public recognition of the elimination. Despite these potential explanations, recent high profile program closures at multiple institutions occurred. Closures were reportedly due to factors such as demographic changes in the traditional student population, decreased funding for public schools, and a mix of other economic factors (Knox, 2023) suggesting that program eliminations may be accelerating.

Public vs. Private Programs

Bell et al. (2017) noted that a disproportionate number of public colleges and universities carry the burden of outdoor academic programs training students in the recreation sector. Approximately 70% of the accredited colleges and universities in the United States are private, but these private colleges only account for about 30% of the academic outdoor programs as noted in Table 1.

Bell, et. al, (2017) also recorded differences in the institutional size of colleges and universities with the number of OAPs growing as institutional size increased. As noted in Table 2, this trend was generally consistent over the past six years.

Table 1*Institutions with Outdoor Academic Programs in US Higher Education*

Institution	Public (30% of colleges)	Private (70% of colleges)
2017	42 (69%)	19 (31%)
2021	82 (64%)	46 (36%)
2023	63 (68%)	29 (32%)

Table 2*Institutional Size of Outdoor Academic Programs in US Higher Education*

Institutional Size	Very Small (<1,000)	Small (1,000-2,999)	Medium (3,000-9,999)	Large (≥10,000)
2017	10 (16%)	13 (21%)	18 (29%)	20 (32%)
2021	16 (13%)	30 (23%)	43 (34%)	39 (30%)
2023	12 (13%)	18 (20%)	30 (33%)	31 (34%)

Finally, Bell et al. (2017) explored enrollment trends for OAPs. As noted in Table 3, data from 2023 suggests a substantive shift over the past six years. While concerning for OAPs, the trend is representative of overall shifts in higher education enrollments due to COVID-19 and the potential early arrival of the pending “demographic cliff” for higher education (Harvey, 2021). Table 3 provides a more in-depth look at how these enrollment trends vary by institutional characteristics.

Table 3*Enrollment Trends of Outdoor Academic Programs in US Higher Education by Institutional Characteristic*

Enrollment Trend	Increasing		Maintaining		Decreasing	
	2017	2023	2017	2023	2017	2023
All OAPs	42%	24%	29%	40%	29%	36%
Institutional Type						
Private	32%	21%	21%	43%	42%	36%
Public	45%	26%	30%	39%	20%	35%
Institutional Size						
Very Small	30%	25%	40%	50%	30%	25%
Small	31%	18%	15%	29%	54%	53%
Medium	61%	27%	22%	30%	11%	43%
Large	33%	27%	33%	50%	22%	23%

Note. Missing survey data from 2023 was imputed from IPEDS with Increasing Enrollment represented by a 20%+ increase in enrollment over the previous five years and Decreasing Enrollment represented by a 20%+ decrease.

Enrollment Trends

The overall enrollment trends changed reported by program contacts changed 2017 to 2023. The number of programs *growing* reduced from 42% to 24% of programs. The largest changes occurred among medium sized colleges, those with a student population between 1,000-2,999. The number of OAP's medium size colleges with decreasing enrollments almost quadrupled to 43% of all OAP's, whereas all other institutional size categories remained relatively stable. The stability of programs is not all good news though, as small college OAP's remained consistent in a trend of decreasing in size.

Conclusion

The OAP data collected via a census methodology in 2021 represents a comprehensive method to understand trends and issues among outdoor academic leadership programs. This data collection follows two other previous comprehensive data collections by Webb (2000), Seaman et. al (2017). Understanding how OAP's may be changing can help to forecast future changes and program needs. The landscape of OAP's shows signs of shifting. The researchers are grateful to all the program directors who shared program data and have engaged with the project to help understand academic outdoor programs.

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Curating a New Meaning of *Outdoor Adventure*: (Re)thinking How We Represent #microadventure Content on Social Media

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Background



Figure 1. Side-by-side comparison of a modern conception of outdoor adventure (Smith, 2019, p. 2) and a Romantic-era depiction of outdoor adventure (Friedrich, 1818).

Able-bodied, White males continue to make up most visual representations of outdoor adventure (Roberts, 2018). This dominant ‘image’ of adventure has existed since the Romantic period and continues to be exacerbated by the complex history of settler colonialism in America (Wald et al., 2019; Whitson, 2021). As seen in Figure 1, side-by-side representations of modern conceptions of adventure and Romantic-era depictions of adventure are almost identical – “the lone White male staring off into vastness” (Roberts, 2018, p. 25). Representations of outdoor adventure typically present a one-sided story framed by conquest and dominated by themes of physical ability, social privilege, and environmental dominion. These themes have manifested into the 21st century reality of outdoor adventure in America, which is currently socially inequitable and environmentally unsustainable (Outdoor Foundation, 2022; Stonehouse, 2022).

A potential solution to these challenges involves a (re)thinking of how outdoor adventure is represented through images, especially on popular social media platforms. Uplifting simple, local, and affordable outdoor experiences, known as ‘microadventures’ (Goodnow & Mackenzie, 2020), is one way of including more voices in the social media discourse surrounding outdoor adventure. Given the prevalence of social media usage in the U.S. (Lajnef, 2023), visual representations of microadventures on widely-used platforms have the capability to invite and popularize less traditional – and potentially more accessible – modes of outdoor adventure.

A focus on outdoor accessibility comes at a critical time for the outdoor education field (Goodnow & Mackenzie, 2020). The long-standing culture of multi-day expeditions to remote places is proving to be unsustainable amid budget cuts, staffing shortages, and environmental crises (Rushford et al., 2020). Microadventures will, ideally, promote accessibility in the outdoors by decentering physically demanding trips and providing outdoor experiences that allow participants to keep up with the demands of existing school, work, and life schedules (Roberts, 2018; Warner et al., 2019).

A gap in the literature exists surrounding the representation of microadventures on social media. More research needs to be done on *how* we are sending messages about what it means to do a microadventure on social media, which is where most of us get daily messages about how to perform various aspects of our identities ‘correctly’ (Lajnef, 2023). Therefore, the purpose of my study is to critically examine visual portrayals of #microadventures on Instagram and Facebook.

In this study, we evaluate if representations of microadventures on social media are reinforcing, resisting, or reconstructing narratives of social and environmental conquest in outdoor adventure. We ask two questions to guide our analysis: (1) How, if at all, are representations of microadventures on

Facebook and Instagram posted via #microadventure displaying themes associated with dominant narratives of social and environmental conquest in the outdoors (White supremacy, performative masculinity, upper-class privilege, physical ability, and/or environmental dominion)? And (2), how is the “regular day” discourse surrounding microadventures on Facebook and Instagram reinforcing, resisting, or reconstructing dominant narratives of social and environmental conquest in the outdoors?

Methods

We use a methodology of qualitative critical media content analysis informed by Hall’s (1973) theory of encoding and decoding to analyze visual portrayals of #microadventure experiences on Instagram and Facebook. Specifically, we analyze 56 #microadventure posts collected on a “regular day” of social media usage (Lopez et al., 2018), and consider the visual and textual themes being presented in the context of 21st century outdoor adventure in the U.S.

In the first stage of analysis, the lead researcher (hereafter referred to as I) ‘deeply read’ each post as described by Macnamara (2005), examining the full rhetorical situation – the audience, timing, media, and envisioned purpose – and consider how the image relates to themes associated with social and environmental conquest in the outdoors. I ask three questions to guide the analysis of each post.

1. How, if at all, does this image convey themes associated with dominant narratives of social and environmental conquest in the outdoors (e.g., White supremacy, performative masculinity, upper-class privilege, physical ability, and/or environmental dominion)?
2. How, if at all, does this image convey themes associated with microadventures as they are described in scholarly literature (e.g., local, short-term, simple, affordable, accessible, sustainable, and/or inclusive)?
3. Are there any other themes of note that were not addressed in the first two questions?

After deeply reading each post and noting prevalent themes, I sorted the posts into three major categories. A breakdown of each category is detailed below:

1. *Reinforce*. Images that reinforce the dominant narrative underpin divisive tendencies of the dominant culture, which include colonialism, sexism, ableism, racism, and capitalism in the outdoors.
2. *Resist*. Images that resist the dominant culture of outdoor adventure emphasize accessibility, holistic sustainability, and/or local relevance.
3. *Reconstruct*. Images that utilize themes associated with the current culture of outdoor adventure but do so in a way that simultaneously conveys accessibility, holistic sustainability, and/or local relevance.

Results and Discussion

We present the results as a discussion of major themes from each category (*Reinforce*, *Resist*, and *Reconstruct*) and include a multi-media definition of microadventures informed by selections from data set.

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Turning the Classroom Inside Out: Supporting Elementary Teachers' Outdoor Learning

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Background

Despite the growing field of research focusing on the benefits of outdoor learning in the classroom, many teachers face numerous challenges such as time and test preparation which can discourage teachers' motivation to situate instruction in the outdoors (Carrier et al., 2013, Marchant et al., 2019; Skaugen & Fiskum, 2015). Additionally, teachers often lack the proper training and support from administrators to enact outdoor instruction (Dring et al., 2020; van Dijk-Wesselius et al., 2020). Teacher support can be a critical component to encourage outdoor learning.

We present a qualitative study focusing on professional development designed to support teachers' implementing outdoor learning, highlighting teachers' experiences enacting these practices. This study is positioned in existing research that identifies the barriers teachers face when implementing outdoor instruction, support they receive in overcoming barriers, and the benefits to students. By centering on teachers' voices and lived experiences, data from this study can help us learn how to better support teachers and schools to implement outdoor learning practices.

Theoretical Frame

This study is framed in experiential learning, a concept described by Dewey (1988) and further expanded by Kolb (1984), which focuses on learning through the act of doing.

Methods

Teachers from two elementary schools participated in three school based professional development workshops during the 2021- 2022 school year about incorporating the outdoors into their instructional practices. The goal of the workshop series was to provide the teachers with the knowledge and skills to transition their existing lesson plans to include learning in the schoolyard. Pre- and post-interview data were collected in Fall 2021 and Spring 2022. Field notes were used to document the teachers' and teacher facilitators' experiences. The first professional development session introduced teachers to the benefits of outdoor learning, paying particular attention to classroom management strategies for the outdoors and we modeled a standards-focused activity in the outdoors. In the second and third workshops we modeled additional outdoor activities and devoted time for teachers to share their own successes and challenges incorporating outdoor learning with their students. Throughout the series of PD sessions, teachers had the opportunity to troubleshoot issues that arose, and share activities with their peers. Field notes and interview transcripts were analyzed using inductive coding to allow themes to emerge from the data (Thomas, 2003). All names are pseudonyms.

Results

Four major themes emerged which reflected the experiences of elementary teachers' initial efforts to incorporate outdoor learning into their classrooms. The first theme addressed teachers' *planning for situating instruction in the schoolyard*. Teachers found that planning was not intuitive as Alison explained, "I just need to be a lot more intentional with planning... I have to sit down and figure out how I can implement this outside." A second theme that emerged was the *barriers to situating instruction in the outdoors*. Alison explained, "I think at the very beginning of the year, one of my barriers was classroom management and time." She went on to explain how student enthusiasm impacted her motivation as, "watching that the kids are learning and having fun while doing it."

The third theme examined teachers' *implementation of using the outdoors for learning*. Kelly explained, "I have realized we can read outside, do science, do math, your social studies...outside." Finally, teachers reflected on the perceived *benefits of outdoor learning and shared student experiences*.

Melissa said, "I think it is a huge help for kids, especially those kids that learn through touching; [being outdoors] is a great opportunity for that." Melissa explained, "I feel like in first grade there should not be a lot of sitting and I feel like when we get to go outside, there is a lot less of that and I feel like fresh air is good for everybody."

Discussion

In the initial interviews, some teachers reported that they had taken students outdoors only for the sake of being outdoors; following the workshop, teachers expressed a desire to *plan* for outdoor instruction, many wanted to learn more about outdoor instruction. While interviews revealed teachers' enthusiasm for outdoor learning and willingness to situate instruction in the outdoors, the *implementation* of outdoor instruction in elementary classrooms depended on the individual teacher. Teachers recognized the value in taking students outdoors, such as fresh air or change of scenery, and while many of the teachers discussed the *benefits of outdoor learning*, data revealed a variety of approaches. Despite the professional development's focus on teachers' adapting their current lessons to include the outdoors, few of the participating teachers were able to implement these strategies.

Our findings align with previous studies that detail *barriers* teachers face when incorporating the outdoors for learning (van Dijk-Wesselius et al., 2020). As identified by Rickinson (2004), teachers in our study also reported a lack of time and resources for implementing outdoor learning. Rickinson (2004) and Van Dijk-Wesselius et. al. (2020) described teachers' lack of comfort and training to implement outdoor learning, and while teachers in our study expressed motivation for outdoor instruction, after participating in the workshop series, they expressed a need for more training in moving instruction outdoors.

Many of the teachers discussed the importance and *benefits of outdoor learning*, but there were a variety of approaches. Teaching is a deeply personal profession where teachers' previous experiences and beliefs help to shape their instructional practices (Hill, 2010; Wallace, 2014). Further support for teachers can include ongoing targeted professional development teachers and peer group work to help teachers incorporate outdoor learning more regularly and efficiently into their classrooms. Many teachers expressed interest in continuing to work with their colleagues to plan outdoor instruction, indicating the need for consistent peer support and professional learning groups that focus on outdoor learning to further support their practice.

Following their participation in the workshop series, we documented a range of teacher attempts to implement new teaching practices. We were encouraged by teachers' expressed goals to learn more and enthusiasm about student reactions to learning in the outdoors. While the professional development experience provided a strong introduction to outdoor instruction, teachers need ongoing support to provide students with authentic learning experiences. Support for teachers can include continuous professional development and time for teachers' shared planning and reflections (Darling-Hammond et al., 2017). When teachers have time for shared planning we can empower and encourage teachers to persist in their goals for outdoor learning and encourage other teachers to provide students with authentic learning in the outdoors.

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How Many Ways Can You Say Outdoor Education?

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Background

Until the 1980s, primarily two terms were popular to describe education in the outdoors: outdoor education and environmental education. In the 1980s adventure education gained a place in the literature. Followed by an explosion in terms that are used to describe being in the outdoors. By *being* we mean all the ways that people do activities, practices, and programming in the outdoors as well as *be* out there, such as forest bathing or meditation in the woods, by a creek, and so forth.

In outdoor fields, many people wonder what the difference is between outdoor education, environmental education, adventure education, and various other terms. There are many ways that people may hear outdoor practices, activities, and programming talked about. This research project traced the history of common terms used in scholarship and practice in the outdoors. The goal was to be helpful in contextualizing the terms that people hear about in popular media and scholarship, including university outdoor education classes. There are benefits to understanding the evolution of these terms including how they may be related to each other. The goal is not that there must be one set of definitions of common terms—rather to get a wholistic picture of where terminology is now knowing that definitions are fluid and will continue to evolve.

At the same time there are advantages to having agreed upon definitions when discussing issues, program design and outcomes, research projects, certain kinds of scholarship, and the like. Agreeing on definitions of terms helps parties involved have a common understanding of key concepts and terminology. Many times, when sharing common language and vocabulary, communication is more efficient and effective. This common understanding can be useful in preventing misunderstandings, ambiguity, and confusion. Without agreed-upon definitions, there's a risk that different scholars or practitioners may use terms differently, leading to inconsistencies in scholarship and practice. Clear definitions help mitigate risk through making it explicit how terms are being used and understood. This clarity can provide a common starting point for problem-solving.

Methodology

The project research question was what are the various terms used to describe fields related to outdoor education including outdoor therapies and how are they commonly defined? The project began by brainstorming terms followed by literature searches, primarily in Google Scholar and Eric databases. Throughout the project and continuing is the accumulation of even more terms than the initial brainstorming—this sort of project continues to grow. Definitions were traced through history to see when they came into common usage and how they have changed over time. This project culminates in a glossary of sorts of current definitions and uses for the terms with the aim of periodic updating. Many books have been written about “what is outdoor education,” “what is adventure education,” “what are outdoor therapies,” and like. Those books go into depth about philosophies, theories, and methods used in the various fields. This project is not meant to try to simplify or distill fields into a simple definition, but rather to help add to understandings about commonly used terms and how they may relate to each other.

Results

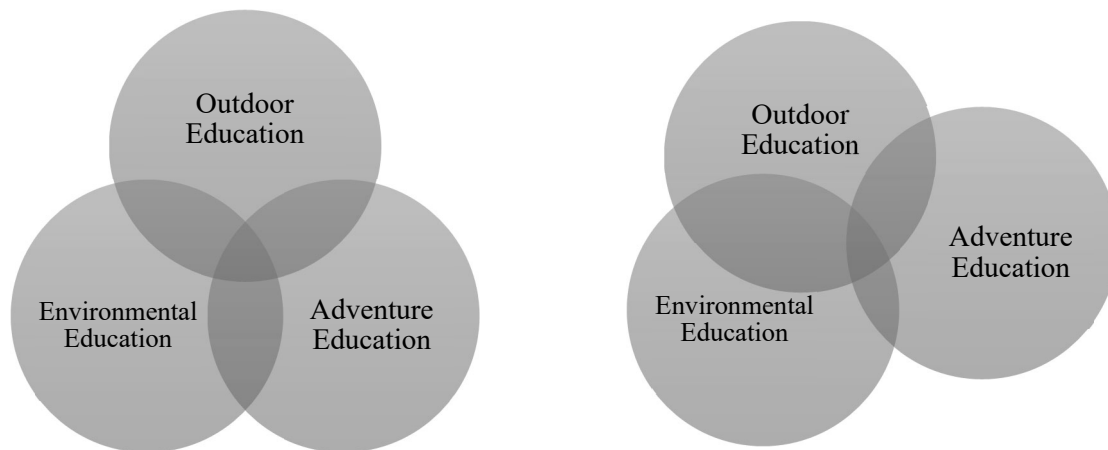
Figure 1 is a partial list of the terms that were covered in this project and illustrates almost 50 terms associated with outdoor education fields and fields related to outdoor therapies. The top part of the diagram are terms related to education while the bottom part illustrates terms about various therapeutic interventions with the outdoors. Of course, everything in the top part can be therapeutic and there are certainly educational components in the practices in the bottom part of the diagram.

Figure 1. *Terms Representing Fields Related to Outdoor Education*



Figure 2 shows examples of ways various fields can relate—including overlap in philosophy, methods, and content. One a program level, perhaps there are equal parts of outdoor education, environmental education, and adventure education. Or perhaps outdoor education and environmental education have more overlap with adventure education playing a minor role.

Figure 2. *Venn Diagram illustrating Overlap Among Outdoor Education, Adventure Education, and Environmental Education*



Discussion and Conclusions

Remarkably, the definition of outdoor education as “education in, about, and for the outdoors” continues to mostly endure (Donaldson & Donaldson, 1958; Ford, 1986). The word education is the most common base word. The words outdoor and adventure are the two most popular modifiers, as in outdoor education, outdoor learning, outdoor orientation, outdoor recreation, adventure education, adventure tourism, adventure therapy, and the like. Terms related to therapeutic endeavors in the outdoors continue to be added, seemingly as more providers want to distinguish themselves from other practices. For outdoor therapies eco seems to be the most popular modifier. Over time it seems that more three word

titles are used such as outdoor experiential education and outdoor adventure education. In our experience, students studying outdoor fields can be curious about why there are so many words to describe outdoor education, and wonder which are correct, so to speak. This is where having common definitions can reduce the likelihood of misinterpretations and ensure that ideas are communicated accurately. Further discussion, including implications, can be shared at the symposium.

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Barriers and Strategies for Utilizing School Outdoor Spaces: Exploring the Experiences of High School Teachers

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Background

School outdoor spaces have the potential to make a significant impact on students' learning by affording them the opportunity to develop and strengthen a connection to the natural world. A connection to nature can provide many benefits to students, such as improved mental well-being (Dring et al. 2020; Li & Sullivan, 2016), better academic performance (Hodson & Sander 2017; Skinner et al., 2012), and improved physical health (Largo-Wight et al., 2018; Pagels et al., 2016).

However, there is a lack of connection to the outdoors in today's educational system (Nordén & Avery, 2020). There are many benefits to learning in outdoor spaces, yet many schools do not incorporate these spaces into their lessons due to various barriers, such as lack of experience (Van Dijk-Wesselius et al., 2020), limited curriculum flexibility (Akoumianaki-Ioannidou et al., 2016), overall lack of support (Skage & Dyrstad, 2019), or a lack of green space maintenance (Van Dijk-Wesselius et al., 2020).

These barriers have been well explored at the elementary and middle school level. However, there has been little research that addresses the barriers high school teachers face, and none were found that solely focused on high school teachers. Learning more about the use, or lack thereof, of school outdoor spaces at the high school level is crucial for helping teachers incorporate these spaces into their lesson plans. Therefore, the purpose of this study was to identify barriers high school teachers experience that prevent them from using their school outdoor learning spaces and to provide strategies for minimizing or overcoming them.

Methods

This study used an online mixed-method survey approach (Creswell & Creswell, 2018) to better understand the barriers high school teachers have faced along with their experiences. The online survey for this study was part of a larger landscape analysis conducted by the Southeastern Environmental Education Alliance (SEEA). The survey was sent to administrators and teachers in eight southeastern states in the U.S. (AL, FL, GA, KY, MS, NC, SC, TN) to learn more about their use of environmental education at school and the spaces they use to conduct their lessons.

For the purpose of this study, several questions were added to the SEEA survey. One example was, "Please describe specific examples of how barriers have limited your use of the school outdoor learning space and how often have you encountered them (e.g. every program, seasonally)?" The survey opened September 6, 2022, and data were collected after seven weeks. Non-identifiable demographic and outdoor learning space data from high school teachers ($n = 154$) were analyzed from the larger landscape analysis survey. Teachers responded to the quantitative questions by indicating the types and frequencies of barriers encountered. The quantitative analysis followed the five-step process as outlined by Creswell & Creswell (2018). This involved assigning codes to the data and organizing them into representative themes.

Results

Through the use of a mixed method survey, 154 high school teachers identified barriers they have faced and provided strategies they have used to combat them. Regarding school outdoor teaching requirements, 85.7% ($n = 132$) of respondents did not have any requirements for incorporating outdoor and environmental learning. Even without an expressed institutional environmental focus, many teachers responded that they were *very likely* ($n = 49, 32.2%$) or would *probably* ($n = 49, 32.2%$) integrate outdoor

learning into their instruction. However, many reported that they *rarely* ($n = 58, 38.2\%$) or *sometimes* ($n = 48, 31.6\%$) took their students outside in the past two years.

A total of 14 barriers were analyzed and sorted based on how likely they were to be considered barriers to teachers integrating outdoor learning (Table 1). The response choices provided were *not a barrier*, *sometimes a barrier*, or *always a barrier*. High school teachers reported that logistics ($n = 117, 76\%$), such as time, distance, and clean up, were the most common barriers they encountered followed by a lack of supplies ($n = 116, 75.3\%$). The next three highest barriers were lack of outdoor spaces ($n = 105, 68.2\%$), technology/connection ($n = 105, 68.2\%$), and student behavior ($n = 104, 67.5\%$).

Table 1
List of barriers and high school teacher responses

Barriers	Always a barrier (%)	Sometimes a barrier (%)	Not a barrier (%)
Logistics	32.5	43.5	24
Lack of supplies	30.5	44.8	24.7
Lack of outdoor spaces	31.2	37	31.8
Technology/connection	22.1	46.1	31.8
Student behavior	17.5	50	32.5
Maintenance	16.9	46.8	36.4
Accessible spaces	24.7	35.1	40.3
Knowing what to teach	12.3	43.5	44.2
Knowing how to teach	12.3	40.3	47.4
Safety	13.6	36.4	50
Standards	12.3	35.1	52.6
Administration	8.4	31.8	59.7
Parental support	7.8	25.3	66.9
Peer support	7.1	22.1	70.8

When looking at a school’s outdoor environment, dedicated outdoor learning spaces were more likely to be utilized. For example, over 60% ($n = 25$) of teachers who had access to a nature trail connected to campus or a designated outdoor classroom used them for outdoor learning. Interestingly, even though 50% ($n = 77$) of school campuses had a greenhouse, only 33.8% ($n = 26$) of teachers used greenhouses in outdoor learning. To help incorporate outdoor learning, the majority of teachers ($n = 108, 70.1\%$) stated that having available outdoor work surfaces, such as picnic tables, would increase their use of outdoor spaces. Available shade ($n = 96, 62.3\%$) and seating ($n = 88, 57.1\%$) were the next most requested. The three together make up what is often considered an outdoor classroom.

The first open-ended question asked about the specific barriers high school teachers encountered and had 49 responses out of the 154 total, resulting in six emergent themes: outdoor space limitations ($n = 20$), lack of school support ($n = 19$), teaching obstacles ($n = 15$), safety concerns ($n = 14$), limited or no space ($n = 13$), and funding ($n = 8$). One teacher provided an example of how many related factors can limit outdoor space use: “We have somewhat limited space, construction destroyed 1/4 of our gardens. Material allocation (compost, mulch, soil, fertilizer, etc.) is difficult at best. I am lacking the biotech equipment and supplies to perform tasks that I would like.”

The second open-ended question asked about strategies teachers have implemented. There were a total of 57 entries, represented by six themes: gathering support ($n = 18$), individual strategies ($n = 11$) (e.g., short exposure, inside instruction/outside activity), just do it ($n = 10$), funding ($n = 10$), planning ahead ($n = 8$), and improving outdoor space ($n = 5$). Some example strategies were: “Communication with all stake holders is essential” and “lessons are explained indoors and 15-30 minutes of class are spent outdoors.”

Discussion

Outdoor learning spaces provide many benefits to student learning and health (Oberle et al., 2021). However, there are many barriers that teachers encounter when trying to use these spaces. The results from this study indicate that obvious outdoor spaces, such as a trail or outdoor classroom, were much more likely to be used by teachers. Yet, logistics was a major barrier. For example, teachers have many required duties and adding a whole new pedagogy to learn can be very time-consuming, a finding which is also commonly seen in both elementary and middle school studies (Dring et al., 2020; Skage & Dyrstad, 2019). A difference from previous related studies was that lack of administrative support, peer support, and parental concern were not major barriers in this study.

There were many teachers who incorporated their own strategies to overcome these barriers, such as gathering support from peers and maintenance staff, taking a chance at something new, pre-planning, and working with students to improve outdoor spaces. With a better understanding of barriers high school teachers face along with strategies used to overcome them, teachers can become more comfortable with outdoor lessons and allow students to be able to enjoy the benefits of outdoor learning at their school.

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Effects of a Thematic Interpretive Day Camp Program on Children’s Environmental Attitudes

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Background

A strong connection to nature, especially in childhood, is an essential tool for developing environmental attitudes that are necessary to address environmental issues (Chawla, 2020; Louv, 2005). However, with over eighty percent of the United States’ population now living in urban and suburban areas, there has been a noticeable decrease in feelings of connection towards the natural environment, a “condition” often termed “nature deficit disorder” (Louv, 2005). Because of this, there has been a push to get children outdoors, often through environmental education (EE) and/or heritage interpretation experiences, such as field trips and summer camps (Dickinson, 2013; Knapp & Poff, 2001). These EE experiences are designed to increase the participants’ environmental knowledge and environmental literacy, help them understand environmental issues, and/or empower them to make change in the hopes that once the children grow up, they will better understand their environmental impacts and have stronger environmental values (United Nations Environment Programme, 1978). Heritage interpretation is defined as, “[a]n educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information” (Tilden, 2007, p. 33). It has been shown to be an effective means of impacting environmental attitudes in certain audiences at certain sites (e.g., Farmer et al., 2007; Kim et al., 2011; Knapp & Poff, 2001; Powell, et al., 2018).

This study examines the effects of a thematic interpretive day camp program held in Stevens Point, WI, on the environmental attitudes of participants. The researchers aimed to address two specific areas of focus:

1. What are the effects of a thematic interpretive approach to programming on environmental attitudes in children attending a summer day camp program?
2. What elements of the program have the greatest perceived impact on environmental attitudes in program participants?

Methods

The researchers designed and developed an eight-day interpretive day camp held at a community natural area in central Wisconsin. The program was developed using the elaboration likelihood model (Petty & Cacioppo, 1986) as a theoretical framework for the program and research. Research-supported best practices in interpretation were used, including utilizing the TORE (thematic, organized, relevant, enjoyable) model of program development (Ham, 2013), incorporating hands-on techniques, and applying novel means of relating information (Buchholz et al., 2015; Knapp, 2007; Martin, 2012; Stern & Powell, 2013). Furthermore, each day was developed utilizing the program planning and development worksheets presented by Buchholz and others (2015, p. 67 & 133). One staff member was hired and trained by the lead researcher. The staff member and lead researcher served as the educators and implemented the program. The camp was run twice, once in June 2023 and once in July 2023.

Participants were surveyed at the beginning and end of the program using the Children’s Environmental Perceptions Scale to determine their environmental attitudes (eco-awareness) and interest in nature (eco-affinity) before and after the program (Larson et al., 2011). Each item was measured on a five-point scale from strongly disagree (1) to strongly agree (5). Participants were interviewed on the last day of the program to understand what elements of the program were most impactful for them and their attitudes about nature. Additionally, program staff made daily analytical memos identifying techniques that resulted in greatest apparent interest, as well as documenting conditions that may have helped or hindered elaboration. Survey data were analyzed using paired t-tests to compare pre- and post-test scores. Interview transcriptions were open coded and will be coded using the elaboration likelihood model.

Educator memos will be coded and used to triangulate interview data. Common themes will be identified relating to elaboration, attitudes towards nature, and impactful experiences. Data analysis is ongoing and will be completed prior to the presentation.

Preliminary Results

The day camp programs had 25 combined participants (June – $n = 8$; July – $n = 17$), with 22 participating fully in the research (June – $n = 6$; July – $n = 16$). Comparisons of pre-test and post-test scores showed small increases in scores for both sessions (June: pre = 4.1979, post = 4.3958; July: pre = 4.2321, post = 4.3478); however, these increases were not significant (June $p = 0.135$; July $p = 0.171$). Analysis of eco-awareness and eco-affinity domains from the pre- and post-tests showed similar small increases, yet only eco-affinity for the July session was significant ($p = 0.019$).

Preliminary analysis of participant interviews revealed a few common themes across both sessions. When asked directly about their feelings towards nature, the majority of participants reported having the same feelings after the program as they did before. Several participants mentioned feeling less apprehensive about certain aspects of the natural world, such as being less frightened of spiders and other arachnids. Additionally, about one third of participants in the July session brought up feelings that nature is important and should be protected. Feelings of connection to the site appeared to increase, with several participants reporting that the site was “more interesting” or “more fun” after the program.

When asked about memorable and impactful experiences, four common codes emerged during preliminary analysis of the interviews. Children identified novel, hands-on experiences such as canoeing, pond dipping, and catching insects, as impactful, with one participant saying they liked, “that those were more hands-on, like, we got to catch things and look at the things we caught.” A sense of exploration was a second common theme, with comments including, “...they set a couple rules, but we could basically – we could just explore wherever.” Participants also enjoyed “getting a closer look” at the natural world; as one participant put it, “[my feelings towards nature] did kind of change, and I did kind of realize that there was some more stuff to nature.” Finally, many participants recalled having serendipitous encounters with wildlife like deer, snakes, and arachnids. These unplanned moments stuck with the participants, with one commenting that they enjoyed, “seeing all the really cool creatures out here like birds and snakes.”

Discussion

The survey results appear to show that this day camp experience slightly increased children’s environmental attitudes, although most increases were not significant. As shown in the pre-test, participants were interested in and had strong attitudes about nature prior to the program. This limited the potential for increasing their scores. Additionally, the small sample size may have impacted the detection of significant changes. The interviews support the survey results, with few children reporting a change in their overall attitudes towards nature. However, the interviews did identify several techniques that appeared to meaningfully engage the participants, which may increase the likelihood of elaboration and the potential for attitudinal change. These techniques (providing hands-on experiences with the resource, giving opportunities for exploration, facilitating close examination of the natural world, allowing for serendipitous encounters) were consistent with the current literature on effective techniques, supporting research-based best practices in the field.

For future research, it would be beneficial to recruit a more representative sample of children from the area to assess the impacts of such a program on a broader demographic. Additionally, following up on the program’s effects several months or longer afterwards would provide insight into the longer-term effects of the program.

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Incorporating Citizen Science in Elementary Schools: Teacher and Student Experiences with Outdoor Learning

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Background

Science instruction in elementary school provides a base for student understanding of the natural world and prepares them for future learning (Appleton, 2013; Curan & Kellogg, 2016), yet policies prioritizing mathematics and reading instruction have marginalized science instruction (Banilower et al., 2018; Plumley, 2019). In response, some teachers have chosen to enhance their science instruction by introducing students to citizen science (CS) projects where students have an opportunity to engage in real-world projects as they collect and make sense of the data (Jones et al., 2012). Such projects further have potential to provide students with opportunities for outdoor learning (Carrier et al., 2013; Szczytko et al., 2018; Shume & Blatt, 2019).

We present preliminary data from *Supporting Elementary Teacher Learning for Effective School-Based Citizen Science (TL4CS)*, a NSF-funded research project. Our research team prepared educative curriculum support materials (Davis et al., 2017) for two existing CS projects, *Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS)* and *Lost Ladybug Project (LLP)*. One of the key goals of our project is to support teachers taking their students outside for authentic data collection and sense making. The research questions asked:

- 1) How do teachers describe their outdoor instruction and their students' experiences in the outdoors?
- 2) How do students describe their outdoor experiences?

Sociocultural learning (Vygotsky, 1978) frames teacher and student learning together in the outdoors that informs Rogoff's (1990) notion of cognitive development with reciprocal contributions of teachers and students when sharing the dual familiarity of the schoolyard.

Methods

All teacher participants I (N=24) were asked to incorporate both CS projects in their science instruction. Twelve of the 24 teacher participants consented to be case study teachers who were observed six times by a project researcher and interviewed eight times. There were three focus group interviews with their students near the beginning, middle, and end of the school year.

Results

The interviews were recorded and transcribed and transcripts were coded for teachers' reflections on situating instruction in the outdoors and their descriptions of their students' experiences with outdoor learning. Teacher themes include *authentic learning experiences in contrast with the focus on test preparation, shifting to using the outdoors as a setting for learning, and personal challenges*. Teacher views on their students included *student enthusiasm for outdoor instruction and students' lack of outdoor experiences*. The student focus group conversations were documented using transcription software and written field notes that were coded for student comments about their outdoor experiences at school.

Teachers

Teacher participants described both positive reflections and challenges of situating instruction in the outdoors. *Authentic learning experiences in contrast with the focus on test preparation*. One teacher contrasted the CS activities with standards-focused school norms and its impact on her teaching. "This was so much more than just a science lesson or a math lesson. It was so much a part of our class. It was activities that we did together that we enjoyed...It has definitely changed my teaching in that I wasn't standards focused, I was purpose focused." Some teachers emphasized the authentic learning experiences in the outdoors, "I used to take them outside to do work or do activities, but now am taking them outside

for a purpose and not just to do classwork in a different spot.” An additional reflection on purpose was, “I feel like I’ve always done that [taken students outside] but [project] definitely made it more obvious it’s the right thing to be doing.” Some teachers contrasted outdoor instruction with school cultures’ emphasis on accountability and testing. “I like to be outdoors...I think the kids learned a ton of things that you can’t get from a test. I think that we’re so tied to doing a test...It’s just unfortunate.” *Shifting to using outdoors as a setting for learning.* One teacher reflected that “[CS] reinforces that learning can be anywhere. Outside doesn’t have to be recess,” and another said, “It’s challenging using an outdoor classroom and them having to learn that you can go outside for a learning experience, not just playtime.” Another admitted, “I definitely want to try to get them outdoors more...I’m one of those, the desks are lined up ...it was kind of neat to see how I could teach them outdoors. You know, they don’t just have to be sitting behind a desk and listen to me, watching me on the smart boards, so for sure getting them outside more.” *Personal challenges.* Teachers shared their own struggles with outdoor instruction. One lamented, “We definitely did not go outside as much as I would’ve liked, so when it comes to my challenges – just having that time.” Another expressed their intention for improvement, “[I really wasn’t able to get into] the outdoor learning...next year it’ll be a little bit different. I think.”

Teachers shared reflections on students’ enjoyment of outdoor learning. *Student enthusiasm for outdoor instruction.* One teacher described student engagement in outdoor learning, “The students participated. I had 100% participation, 100% feedback. I don’t know any other way in school that you get that return on the investment.” In addition to outdoor instruction, students connected with science, “They like to be outdoors; they spent more time outside this year than ever before – science is their favorite.” Another teacher reflected, “It’s like they had that purpose for being out there. And it wasn’t as intimidating to them to be in nature.” *Students’ lack of outdoor experiences.* Many teachers described students’ lack of outdoor experiences. “Some kids don’t get outside at all. One didn’t really think about being outside and connecting with nature and prefers to stay inside and play a lot of video games. I have to remember that not all kids go home and play outside, so it’s an important experience for them. Another said, “[Students] are able to look up from the screens...they definitely have a better appreciation for the outdoors.”

Student Focus Group

Most students expressed their *appreciation for outdoor experiences*. One student explained “I like to just see how the trees are moving. And you look outside and see the trees move and I think I’d like to just go outside and feel what the temperature is like. Not seeing it on a screen.” The same student elaborated on being outdoors and getting to “feel the grass and how wet it is.” Many students felt an increased awareness in the outdoors, “I’ve never seen clouds that look like that before, and before this I never even noticed anything. So this thing has helped me learn a lot.” Some students described cognitive benefits such as “I feel more thoughtful about things in the outdoors” and that it’s “easier to concentrate outside.” Additional descriptions of *how the outdoor experiences contrast with the classroom*, “It’s great for kids to feel like they’re more adult. We get to be outside and actually use their mind rather than sitting inside. Unlike what a normal teacher will do with three days of ladybugs on the screen.” Other descriptions contrasting with the classroom included, “I like the outside more. It just seems refreshing to be somewhere that’s not class,” “Outside is more calm than in the classroom. Classrooms are wild,” and sadly, “I love going outside. Being free instead of being in jail.” While the vast majority of students appreciated the change from classroom learning, a few complained about going outside when it was cold or wet. The authenticity of collecting data in the outdoors and sharing with scientists helped students recognize their important contributions as scientists. “Learning doesn’t have to be boring. We can learn more about nature, active learning. It is exquisite.”

Discussion

Data from this study identify the potential for incorporating CS projects in formal education, expanding instruction beyond the classroom, and engaging students in authentic data collection and sense

making. “Students can then appreciate what their observations mean and how they might fit with those of others into the missions of broader science initiatives” (Esch et al., 2020, p. 5). In our study, student focus group conversations reveal the cognitive and affective benefits of situating instruction in the outdoors and the potential for initiating student enthusiasm as they collect and make sense of the data (Jones et al., 2012). Many citizen science projects provide students with opportunities to connect classroom learning with the natural world outside of the classroom (Carrier et al., 2013; Szczytko et al., 2018; Shume & Blatt, 2019), and our goals are to support both students and teachers. When we develop educative curriculum materials (Davis et al., 2017) for citizen science projects, we save teachers time and enhance both their content and instructional learning. While teachers in our study shared their enthusiasm for CS and outdoor learning, many described struggles navigating institutional/policy obstacles such as time, preparation for shifting their instruction, and pressure to prepare their students for standardized testing. Our findings can be used to document support for teachers’ science instruction and outdoor instruction and build both teacher and student cognitive and affective learning.

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Influence of Childhood Connection to Nature on India's Outdoor Professionals

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Background

A robust body of research has identified three primary life experiences that foster the development of a long-lasting commitment to active care for the natural world: time spent enjoying nature during childhood; a close adult role model for the appreciation of nature; and participation in a nature and/or environment focused organization (Chawla, 2007; D'Amore & Chawla, 2020). Of those three, time spent in nature has been identified as potentially the most significant pathway for increasing the likelihood that people will engage in responsible environmental behaviors, especially if the nature experiences begin at an early age (Chawla, 2009; Nord et al., 1998; Wells & Lekies, 2006).

Chawla (1999) interviewed a diverse group of committed environmentalists, who were asked to share the sources of their commitment. The two factors cited most frequently as the catalyst for their dedication to environmental protection were positive experiences of natural areas in childhood and family role models. These sources of commitment often went together, with the majority of those who talked about a special childhood place in nature also mentioning a special relative who affirmed nature's value (Chawla, 2009).

D'Amore and Chawla (2020) suggested that a third influential experience for those with an active environmental ethic is participation in a club or organization that focused on nature and/or environmental issues. Together these three experiences seem to create the conditions for a sustained commitment to care for the natural world. And, while childhood time in nature has been shown to be a strong predictor for spending time outside as an adult, Chawla and Derr (2012) recognize that immersive experiences in nature during adolescence are also significant.

If people fail to have outdoor experiences in nature in childhood, all is not lost. Intense experiences of nature, inspiring mentors, supportive friends, and engaging organizations in adolescence not only reinforce early experiences, but also appear to be able to compensate for missed experiences of early free play in nature... What emerges are different paths into environmental action, although all involve direct experience of nature in some way, at some time, as well as some form of social support. (p. 535)

Additionally, Caston's (2014) research found that people who choose careers in outdoor adventure education (OAE) fields and engage in responsible environmental behaviors, often reported having had transformational experiences in nature. According to Caston (2014) a transformative outdoor experience is an event that results in perceived change in the inner life of a person that results in changes in behaviors, values, and beliefs. The research question guiding this study was how childhood or adolescent experiences with nature (time in nature, a role model, participation in a club or organization that focused on nature and/or environmental issues, and a transformative experience in nature) might have affected pro environmental behavior and career choices of Indian OAE practitioners.

Methods

Data were collected through semi-structured interviews with 25 Indian OAE practitioners from five different states in India. A 13-question survey also was distributed to the 25 practitioners to gain clarity about childhood time in nature, the presence of role models, participation in clubs, and other data as well as information about transformative experiences in nature. Practitioners ranged in age from 31 to 81 years old and seven identified as women and 18 as men. Semi-structured interviews offered a framework that maintained the consistency of the inquiry while allowing flexibility for the interviewees to share their unique experiences and perspectives (Patton, 2014). Each participant was asked about their influences in terms of their appreciation of nature and the outdoors and ultimately their career choice in OAE fields. This study is a subset of a larger study that explored the history, influences, existing

practices, and emerging trends in OAE fields in India (Mitra, 2022). The research project was approved by the (anonymized) Institutional Review Board. Interviewees consented to be identified in the research report. The participant interviews were transcribed and coded. The analysis was conducted in a reflexive manner, ensuring the interpretation of data was reflective of the practitioners' experiences and not merely the researchers' preconceived notions or theories.

Results and Discussion

Most study participants (Indian OAE practitioners) shared the same three life experiences that promoted their positive human-nature relationships, as noted in the literature, and reported that their experiences were significant in steering their lives towards careers in OAE. These experiences included spending time in nature during their childhood; identifying a close adult role model who encouraged appreciation of nature; and participating in outdoor activities through formal organizations such as World Wide Fund for Nature, Scouts and Guides, Duke of Edinburgh's International Award, National Cadet Corps, Youth Hostel Association, and adventure courses offered by Indian Army, mountaineering institutes, and others. For example, interviewee, Pavane Mann, reflected on her growing up experiences,

When my teacher said, "look at this spider's web and this is the spider's telegraph wire," it took away the fear factor and you saw [a] little bird's nest in hedgerows and you saw these things and it made nature, the wider world, the natural world, a comfortable place to be. So, you, as a human being, developed a confidence of existence. You could walk in the wild because you knew it did not hurt you and harm you and it was a comfortable place to be.

Study participants reported impacts from responsible adults in their childhood who helped inspire a caring behavior towards nature. Their parents, siblings, relatives, or teachers acted as role models to build a caring relationship with nature. Sarabjit Singh Wallia said,

I got introduced to the outdoors really early. Whether it was full day picnics or overnight trips with my parents or me and my brother and my mom and my dad on a scooter with a picnic basket and we would just leave on a Friday and come back home on a Sunday.

Akshay Shah shared his uncle's influence in introducing nature to him in a positive way,

He was into nature, he was into birds, he was into wildflowers. He was into animals. So, he was the one who actually sort of introduced me to the natural history and because of that my love affair with the outdoors started.

Interviewee, Usha Ramaiah, spoke about her participation in Scouts and Guides, "I was involved in scouting and guiding from 1948 [7 years old]. So, this camping, doing outdoor activities have always been my interests." The impactful childhood experiences acted as catalysts for fostering positive environmental behaviors in adulthood. Many participants in the study expressed their profound gratitude for nature, which played a pivotal role in shaping their professional choices within outdoor fields. For instance, Shantanu Pandit recounted his admiration for the Western Ghats (mountain range) in India, which ignited his interest in outdoor pursuits. He described his experience when he was 12 years old,

It was early June and a summer storm had just passed us by. Our leader sat us down on the wet ground and read us a chapter from a history book about the fort we were on. As we sat there, a frog close to us was patiently gobbling up ants that emerged from their nest on their nuptial flight. It was surreal. What I was seeing, what I was hearing, what I was smelling (wet vegetation and petrichor!) and what I was feeling was an intensely immersive experience, one that brought the world completely alive for me. This was stuff straight from the books. This was REALITY. This changed things for me.

Ravi Kumar highlighted his inclination to explore a nearby national park as a means to connect with nature, fostering a sense of personal growth. These early experiences prompted outdoor practitioners to become promoters of environmentally friendly practices in their teaching. Ravi Kumar echoed other practitioners' observations on the transformative effects,

I realized there is something special about outdoors. It just made me feel so humbled, so small, put me in my place. And then I suddenly became very passionate about what is that which made me from being on the other end of the spectrum, to suddenly being respectful. The spectrum was so black and white for me, that it was a powerful transformational experience for me—that seven-day hike was very special. And so that is the moment, I decided that there is something that outdoors has and that if it can change a person like me, I just want to make sure I explore more and provide more of this opportunity for a lot more youngsters.

Conclusion

It appears that Indian practitioners of OAE in this study may have similar childhood experiences with nature as reported in the literature, which influenced their development of deep appreciation for nature, pro environmental ethics, and their career choices in OAE. Most interviewees experienced time in nature as a child or adolescent; time with a caring adult who modeled nature appreciation; and participation in outdoor or environmental organizations, as reported by D'Amore & Chawla (2020) and others. Additionally, many interviewees reported transformative experiences in nature as described by Caston (2014). Further international research can help understand if people from other countries and cultures have similar determinants to pro environmental behavior and choosing careers in OAE as research in North America has shown.

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The Impact of an Intergenerational Citizen Science Program

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Background

Mannion, 2016 states that intergenerational (IG) learning is a developing area within the education and learning field and suggests there is a need for members of families, organizations, businesses, education, and other communities to encourage the generational transfer of knowledge, values, and dispositions related to many topical areas, including environmental and ecological issues. This study considers the effect of an IG citizen science environmental and outdoor education (EOE) program at Lake James, NC supported by the Lake James Environmental Association (LJEA).

LJEA's purpose is "to protect and enhance the long-term environmental health and natural beauty of Lake James and its watershed" and has a vision of "building a collaborative community that understands, appreciates, and protects Lake James and its watershed" (LJEA, 2023). The IG, experienced-based program was led by LJEA volunteers (most over 60 years old) and college-aged mentors. IG programs are defined by the International Consortium for Intergenerational Programs "social vehicles that create purposeful and ongoing exchange of resources and learning among older and younger generations" (as cited in Kaplan, 2001, p. 4). Kaplan (2001) defines IG programs as serving people who are 21 and under and those who are 60 and over and goes on to describe that the program's intention may benefit either generation, or sometimes both generational groups.

For this study, the words IG and multigenerational (MG) are used synonymously, with the title of the program as: MG, Environmental Science Field Experience (MEFE). The goal of MEFE is to bring together senior volunteers, college student mentors, and western NC high school (HS) students in 10th-12th grade to understand and appreciate the science involved with environmental protection and restoration of the Lake's environments. Program goals included the transfer of knowledge, values, and dispositions about local natural resources from one generation to another. MEFE is set up with the general intention of benefiting the HS-aged student but may also impact the college-aged student.

Literature Review

Existing literature on IG programs describes various types of programs and program goals. Canedo-Garcia et al. (2017) identifies that IG programs are often focused on education, aging services, and mental health. Kaplan (2001) describes specific programs including older adults acting as tutors or readers in the schools, litter pickup, community gardening, and older adults teaching skills (e.g., juggling) to the younger participants. A previous program titled "Center in the Park," in Philadelphia offers environmental education activities for school children, including exploratory canoe and sailing trips to monitor water quality (Kaplan, 2001).

Kaplan (2001) determined other outcome variables including affect, cognition, behavior changes in participants, confidence, self-esteem, and changes in school performance. Friedman, (1999, as cited in Kaplan 2001) expressed impactful results of IG programs and described a certain 'magic' that happens when generations interact. That 'magic' is difficult to quantify. Jarrott et al. (2021) includes a variety of methodological approaches to data collection and analysis, yet found qualitative methods predominated.

Purpose

The purpose of this research was to determine the impact of an IG EOE program on HS and college-aged students. The following research questions guided this study: (RQ¹) Does MEFE impact students' preconceived opinions about older adults? Such as, do HS and college students learn that despite potential physical limitations, many senior adults have extensive knowledge, motivation, abilities, and engaging personalities? (RQ²) Are knowledge, values, and dispositions about the Lake James ecosystem transferred to the HS and college-aged students?

Methods

This study employed a multiple method design as recommended from previous studies on IG program effects (Kaplan, 2001). Pre-post questionnaires using the Children's View of Aging Scale (Whiteland, 2016) were collected as designed to detect affective, cognitive, and behavioral changes in the participants. Items used in the Children's View on Aging Scale (CVOA; Whiteland, 2016) included measures of (a) what it feels like to be old, (b) attitudes toward older people, (c) perceptions of volunteers' motives for participating, and (d) perceptions of senior volunteers' ability to help. Participants were also prompted with open-ended qualitative questions in the post-questionnaire asking about the transfer of knowledge, values, and dispositions about the Lake James ecosystems. During the questionnaires, participants were given free space to provide a description of older adults to see if any additions or changes are evident.

The study gathered responses from seven participants (three female, four male) ranging from 15-22 years old. Participants were mostly white/Caucasian, non-Hispanic/Latino with one identifying as Native American/Alaskan Native, Hispanic/Latino. Five participants noted that they had lived in a household previously with an older adult.

Results

In responses to RQ¹, data suggest there is a shift in preconceived opinions regarding older adults after the MEFÉ program. To the question, "describe a person over 60" in the pre-questionnaire participants discussed physical traits of aging (e.g. thinning and greying hair, use of a wheelchair or walker, or lack of physical fitness). Some active recreation activities were noted (e.g. golf and fishing) as well as many sedentary activities (e.g. crossword, reading, and fishing,). The postquestionnaire response to the same question participants mentioned more emotional and interpersonal characteristics (e.g. hobbies, proactive, fun, kind, gentle, and not acting like they expect an older person to act physically). One 17-year-old, male participant, said, "I definitely see aging as less of a negative experience when seeing how smart and active a lot of the older folks in the MEFÉ were." There were a few negative responses to this question, such as being "too focused on one thing" or "disconnected and difficult to understand."

Our sample size was not conducive to an attempt at statistical analyses methods of program effect; however, themes were noted when reviewing responses. Regarding RQ² students maintained high interest or knowledge and perspective of nature between pre-post questionnaires. One student increased in response to "interest and knowledge of science" and "interest and knowledge of the scientific method" after the program.

Discussion

This study provides further support for the implementation of IG components into EOE programs. Canedo-Garcia et al. (2017) confirmed the evidence of a useful role of IG programs in reducing negative stereotypes, prejudice, and discrimination associated with older adults and aging. We found similar evidence that the program aided in reducing some negative stereotypes and preconceived perspectives regarding older adults.

From review of these data, we would like to posit that empathy development is a key outcome of IG programs. We noted younger participants were quick to identify the kindness, knowledge, and admiration for persistence in recreational pursuits of their older adult counterparts as well as recognizing the difficulties and challenges these older adults overcame (e.g. mobility difficulties) to participate. One participant said, "I hope [when I am an older adult] to have just as much fun and continue to do the same things I do now." Similarly, Jarrott et al. (2021) found empathy and cooperation results from IG programs.

Future studies may want to employ different methodological approaches aside from the CVOA written responses (e.g. mental mapping, drawing images of older adults pre-post program). Our critique of the CVOA found that the questions asked generated similar or near identical responses from participants. Respondents indicated it was difficult to distinguish the differences between the questions resulting in

similar responses. Increased participant numbers, both older adults and youth would provide a richer description of the interactions as well.

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Comparing the Differences Between High and Low-Point Narratives in Outdoor Adventure Education

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Background

Identity development is an important task for youth (Erikson, 1968). Experiences and events during this rich developmental time have been known to influence a person's identity (e.g., Pasupathi et al., 2007). In the narrative identity framework, people create an evolving life story by integrating important life events with ideas of past, present, and future selves (McAdams, 2001). As people make meaning of these experiences throughout their lives, significant events may be integrated into a continuous sense of self, while other events may challenge one's identity and lead to potential transformation (McAdams, 1985). The process of making meaning from previous experiences and drawing connections between experiences and the self is rooted in autobiographical reasoning. This process is key to the development of a life story, and the development of identity (McAdams, 2001; Pasupathi & Mansour, 2006; Pasupathi et al., 2007; Thorne et al., 2004). One way of examining the meaning that people make from these moments is through meaning-making complexity. Meaning-making complexity (i.e., sophistication of meaning) is characterized by the level of insight someone gains by reflecting on a previous experience (Thorne et al., 2004). As meaning-making is at the core of narrative identity (Adler et al., 2017), it is important to consider the degrees of meaning that people make from identity salient events in their lives.

Outdoor adventure education (OAE) has been found to be a fertile environment for youth identity development (e.g., Duerden et al., 2009). OAE promotes development and learning through activities, risk, and reflection in a remote outdoor context (Ewert & Sibthorp, 2014). McAdams (1985) identified high points and low points as nuclear episodes, or specific and consequential scenes in a person's story, that are connected to a person's identity (McAdams, 2008). However, little is known about the nuances of the meaning that people make from these experiences during OAE. More knowledge about these nuances may allow OAE practitioners to better understand how to create an identity-supportive context, and how moments during their programs can have meaningful and lasting impacts on participants. The purpose of this study is to compare the differences between high and low points on OAE courses and to understand the different identity salient lessons and insights that people gain from high points and low points.

Methods

For this study, the author utilized a within-subjects design and collected written high-point narratives and low-point narratives from NOLS alumni who took a course between 2015 – 2019 and were between the ages of 14 – 25 during the time of their course. A total of 80 people completed both narratives. The high point and low point prompts were adapted from the Life Story Interview (LSI; McAdams, 2008). Before creating and distributing the survey, these prompts were tested with a pilot sample (Adler et al., 2017). To prevent an ordering effect, prompts were randomized in the survey.

Narratives were analyzed both quantitatively and qualitatively and were coded at the narrative level. First, each narrative was coded utilizing an a priori meaning-making complexity (MMC) scheme, which is scored on a scale of 0–3 (McLean & Pratt, 2006; McLean & Thorne, 2003), with 0 being *no meaning*, 1 being a *lesson*, 2 being between a *lesson* and an *insight*, and 3 being an *insight*. Then, a paired sample *t*-test was used to examine the difference in mean MMC scores between individuals' high-point and low-point narratives. Specific lessons and insights were thematically coded to understand the content of the lessons and insights people gained. To examine the frequencies of event types, a coding scheme was drawn from prior research (e.g., Thorne & McLean, 2002). Events were scored as 1 for "present," or

0 for “absent.” The scores were summed for each event type, and a McNemar chi-square test was used to examine the differences in frequencies of each event type between high and low-point narratives. A second researcher coded 20% of the narratives to check for inter-rater reliability.

Results

High-points consisted of Relationship Events, Achievement Events, Autonomy Events, Facilitated Activity Events, Environmental Events, and Leisure Events. Mortality Events were not present in the high-point narratives. Low-points consisted of Relationship Events, Achievement Events, Mortality Events, Facilitated Activity Event, and Environmental Event. Autonomy Events and Leisure Events were not present within the low-point narratives. There were significantly ($p < .05$) more relationship events in low-point narratives (54.3%) than high-point narratives (33.3%). There were significantly ($p < .05$) more achievement events present in high-point narratives (34.6%) than low-point narratives (9.9%).

Qualitative analysis showed similarities and differences between the nuances of the event types that were found in both high and low-point narratives (Relationship Events, Achievement Events, Course Activity Events, Environmental Events). Relationship Events were most often associated with support from peers or instructors within high-point narratives, whereas in low-point narratives they were most often associated with interpersonal conflict (e.g., “It seemed no one else in the tent group got along very well either so it created drama and a bad sense of team comradery for us and the rest of the group”). Achievement Events were most often associated with overcoming a challenge (e.g., “Reaching the top of Kilimanjaro, I was overrun with joy. It was the moment we were building up to and it symbolized so much of what we learned during the trip”). Course Activity Events were associated with a variety of course elements and tasks (e.g., “I found myself working with a group in the late night to go through a scene of wilderness first aid recovery for a mock patient”). Environmental Events were similar across both high and low-point narratives, and often focused on awe and appreciation of nature or challenging weather and terrain (e.g., “Being in awe the entire time we spent up there, from the views on arrival to the immaculate sunset, the river of stars”).

Meaning-making complexity was coded both quantitatively (i.e., 0–3) and qualitatively. The quantitative results indicated that low-point narratives ($M = 1.09$; $SD = 1.08$) contained significantly ($t(80) = 2.40$, $p = .009$) more meaning-making complexity compared to high-point narratives ($M = 0.77$; $SD = 1.06$). Our qualitative analysis examining the content of the lessons and insights (i.e., MMC) found similarities and differences in the types of lessons and insights found in across high and low-point narratives. High-point narratives contained identity-related lessons and insights focused on the role of self in belonging and inclusion, the importance of feedback, the importance and value of other people, resilience, and self-concept (e.g., “That moment gave me the opportunity to redefine how I viewed myself as a person and made me realize that I could overcome obstacles that I never imagined were possible”). Low-point narratives contained identity-related lessons and insights focused on how group conflict and culture can influence one’s gender expression, conflict with instructors can influence one’s sense of self, and peer conflict and change influence one’s understanding of self (e.g., “I also learned more about who I am as a person and that I don’t need others’ approval if I believe I am doing the best I can”).

Discussion

In both high and low-point narratives, participants told stories that involved events focused on relationships, achievements, course activities, and the environment. However, achievement events occurred more frequently in high-point narratives, and relationship events occurred more frequently in low-point narratives. High points also contained autonomy events and leisure events, which low points did not, while low points contained mortality events, which were not present in high points. Content coding suggested qualitative differences and similarities between high and low points as well. The most common difference was with relationship events. Relationship events within high points often focused on support from peers or instructors, while relationship events within low points often focused on conflict between peers or even instructors. Conflict has been found to be an important factor in narrative identity

development. Thorne and colleagues (2004) found that some of the most common event types associated with meaning-making were relationship-focused. They also note that discomfort, disagreement, or unease are common aspects of relationship-focused narratives, and that these moments can be cause for more reflection compared to less stressful events (Thorne et al., 2004).

While both high-point and low-point narratives provided valuable learning and developmental benefits, low points on courses had significantly higher meaning-making complexity. Research has often focused on the peak experiences that occur on courses (e.g., Boniface, 2000), which may be valuable for learning outcomes and developmental benefits, yet were found to be less salient for identity development. Previous research has found that low points, such as failure (Gookin & Swisher, 2015), or conflict (Warren, 2009), are valuable experiences for learning and group development. The results show that low points, especially moments of interpersonal and group conflict, led to numerous insights about the self. It is important for practitioners to not only focus on the high-point experiences on courses, but know that low points, such as conflict, are important aspects of development. Some participants even noted how unresolved conflict on courses was challenging at the time, but looking back, had profound impacts on their identity. This study sheds light on the moments on courses that are impactful to students and their identity as well as the meaning that people make from these moments. By utilizing the narrative identity framework, this study also provides methodical contributions to research on lasting outcomes and identity development in the OAE field.

OAE programs can be a rich developmental context that can impact who people are and who they want to become. High points contained significantly lowering meaning-making complexity scores compared to low points. High points were focused on supportive relationships and achievement, were generally positive in nature, and contained lessons and insights around resilience, self-concept, and self-efficacy. Low points were focused on interpersonal conflict events or environmental and/or personal challenge events and contained lessons and insights around self-concept, decision-making, and conflict management. Although the narrative identity literature identifies challenging events (Pals, 2006) and interpersonal conflict (Thorne et al., 2004) often linked to more meaning-making, the present study results suggest that both high points and low points can lead to meaning-making about OAE experiences. Practitioners working with youth and those targeting identity development might leverage these events.

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Exploring the Role of Recreation in Rural NH Youth's Engagement with Master Narratives

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Background

Rural youth often feel compelled to leave their home communities and seek new opportunities elsewhere. As rural schools “send off all their good treasures” (Sherman & Sage, 2011), youth who choose to stay in their communities often receive far less postsecondary support (Carr & Kefalas, 2009). Rural outmigration is driven in part by *master narratives*, which are the “culturally shared stories that guide thoughts, beliefs, values and behaviors,” (McLean & Syed, 2015, p. 323) including “college for all” (Seaman et al., in press) and the developmental imperative to “spread your wings” (Hartman et al., in preparation), which communicate that “the good life” (Syed & McLean, 2022) is best achieved elsewhere. The present study examined the role of leisure and recreation in facilitating youth engagement with cultural master narratives in New Hampshire, a predominantly rural state that is prioritizing outdoor recreation as an engine of economic development and population recruitment and retention.

Literature Review

Demographically, “depopulating rural counties had an average migration loss of 43 percent of their 20-24-year-olds in each decade from 1950 to 2010” (Johnson & Lichter, p. 2). According to Ulrich-Schad (2015), “recreation status of a county was a predictor of outmigration among emerging adults and in-migration for all other age groups” (p. 157), a trend Seaman et al. (2019) also recognized in longitudinal research on youths’ outdoor recreation patterns in adolescence and their postsecondary plans. To date however, researchers have not addressed how master and alternative narratives are communicated through the leisure/recreation activities individuals participate in and how these messages shape future planning including the intention to leave a small-town or rural community.

Data Collection and Analysis Methods

From May-November 2023, we conducted multimedia-based focus groups across NH with up to 16 youth participants aged 16-19 followed by 30-minute narrative interviews with 1-3 purposively selected, diverse members of each focus group who volunteered to participate. The interview protocol used open-ended questions about youths’ recreational experiences and included photo-elicitation prompts designed to generate narrative-like responses (stories) that reveal details and themes that would be difficult to inquire about directly. To date we have conducted 10 focus groups and 15 interviews. The study received IRB approval from the University of New Hampshire.

Our analytic approach was informed by Lareau (2014), who described two differing parenting styles: *concerted cultivation*, a middle-class approach to parenting in which parents take an active role in fostering the opportunities and activities for their children, and *achievement of natural growth*, which is more commonly observed in working-class and low-income families and focuses on minimizing parental involvement in youths’ leisure and educational activities. We were interested in learning if these parenting strategies are related to the types of activities in which individuals are engaged (organized vs. unstructured – see Sharp et al., 2014) as well as their relationship to different identity master narratives. Interview analysis was approached through the lens of discerning *small stories* (Bamberg, 2008) to identify the identity resources participants reference when describing their recreational activities (relational, ideational, and material) (Nasir & Cooks, 2009). By analyzing how recreation facilitates engagement with master narratives or supports development of alternative narratives, this approach allowed us to identify patterns that help understand the relationship between child rearing paradigms, broad types of leisure activity, and processes of identity formation.

Results/Discussion

Two participants with differing backgrounds and experiences were selected from the larger participant pool for idiographic analysis. The first participant, Charlotte (a pseudonym), provides an example of a young adult whose parents were highly involved in her extracurricular activities who plans to attend college. She talked about her parents signing her up for soccer and ‘T-ball,’ and as an afterthought mentioned that her family owns a martial arts studio in which she has been very involved since she was young. When asked whether she likes it, Charlotte said, “Well, I’ve done it for a while. So I’m kind of getting to my end. But it’s definitely been a big impact in my life just through like, people and learning how to like communicate with adults and just being around kids.” Charlotte’s top choice for a university was out of state, however, by the time of the interview, financial realities had made her consider an in-state option. When asked about her plans for ‘after high school,’ Charlotte immediately said which institution she wanted to attend, using the school’s acronym.

The second participant, Ben, provides an example of a young adult whose extracurricular activities were unstructured and who is attending community college remotely from home. Ben described experiences of heading into the woods alone, wandering town and around shops, and finding an old graveyard in the woods. Ben talked about how his lifestyle and that of rural New England is not one visible online: “Especially because like it’s not shown anywhere else. Like I go on Tik Tok, and I’ll scroll forever. And there’s no nothing about [rural New England]. No one’s like, ‘Oh, this is how good my life in the woods is.’ Gonna be like, ‘I just moved to the city.” Ben had participated in a focus group in the spring of his senior year, and by the time of his interview it was the fall of the following year. When asked about what he was doing now that he had graduated, Ben mentioned his attendance of online community college and described the challenging feelings of still being at home rather than ‘exploring’ like many of his friends.

Charlotte’s and Ben’s biographies provide examples of master and alternative narratives, respectively, in rural contexts, and their relationship to different parenting approaches and recreational patterns. The societal messaging that Charlotte and Ben received was similar, however the influence and pressures in their immediate environments were not. While Charlotte’s messaging at home aligned with what she heard at school and from influential players in her life, Ben reconciled conflicting models on his own and choose a path that ultimately could be viewed as a middle-ground between attending college and staying near home. Their examples demonstrate the importance of understanding how messages about postsecondary planning are communicated and reinforced by families and other youth-serving organizations.

Conclusion and Implications

These two participants provide examples of how some of the structural-psychological factors connect recreation involvement, postsecondary decision making, and broader demographic patterns. The results echo McLaughlin et al. (2014) and Seaman et al., (2019) who found nature-based recreation to influence rural youths’ residential planning. Charlotte and Ben show that recreational settings play an important role in how youth organize future plans. While more research is needed, educators and recreation practitioners should consider how different ideas about the “right” path forward are messaged and influence how a young person values their options and choices.

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Inspiration in the Galapagos Islands: Characterizations of Awe, Wonder, and Sublimity

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Background

The purpose of this study was to characterize inspiration and its components in response to natural landscapes. In the past 20 years, philosophical constructs like inspiration (Thrash & Elliott, 2003), awe (Keltner & Haidt, 2003), wonder (Brady, 2013), and sublimity (a balance of awe and fear) (Pelowski et al., 2019) have been operationalized as psychological constructs and investigated in terms of human health benefits (Jiang & Sedikides, 2022) and experiential education (Washington, 2018), but these constructs have not been extensively characterized in the outdoor literature. A recent study of visitor experiences of US National Park landscapes indicated that inspiration possessed components of awe, wonder, and sublimity (Shores et al., 2023; Daniel et al., 2021). The current study looked at these components in visitor experiences of the Galapagos Islands during a 10-day university field course.

Methods

This study used qualitative content analysis of visitor responses to the Galapagos Islands in May 2022 to describe and develop an understanding of inspiration, awe, wonder, and sublimity as experienced in response to natural landscapes. Specifically, the researchers were interested in participants' experiences of inspiration visiting the Galapagos Islands and engaging in various activities in and around the islands, and to what degree awe, wonder and sublimity were present in the moments of inspiration. Participants were college students ($n = 16$), ages 18-22, on a field course to the Galapagos Islands, during May 10-21, 2022. While exploring the biogeography of the islands, participants were asked: What they found most inspirational and why? If they had experienced awe, wonder, or sublimity? If so, how and why?

These concepts were explained to participants and definitions were on their questionnaires. Surveys were administered every two days during the trip. This decision was made due to travel logistics, and this allowed for sufficient data sampling. Data from the surveys and field notes were coded and analyzed using a constant comparative method allowing themes to emerge directly from the data (Glaser, 1965).

Results

Findings indicate that inspiration was most often associated with direct experiences of the new and beautiful. Specifically mentioned were new species flourishing in a harsh ecosystem, overcoming personal challenges, conservation as a cultural value, cultural interactions, and beauty.

Awe, wonder, and sublimity were examined with respect to how they influenced the experiences that participants identified as inspirational. Awe was most often associated with direct experience of new species, new ecosystems, vastness, and power (e.g., ocean, volcano). Wonder was most often associated with the beauty and intricacy of wildlife (e.g., swimming with sea turtles), and fascination with new species or ecosystems. Sublimity was most often associated with direct experience of potentially harmful wildlife (e.g., swimming with sharks, rays, or sea lions) and potentially dangerous locations such as the Sierra Negra volcano.

Discussion

Overall, the findings correspond to the definitions of inspiration (Thrash & Elliott, 2003), awe (Keltner & Haidt, 2003), wonder (Brady, 2013), and sublimity (Pelowski et al., 2021) from the literature. Inspiration stemmed from direct experiences of the new and beautiful. In terms of inspiration's components, awe was a response to things that were vast, powerful, or required accommodation of new ideas. Wonder was more cognitive in nature, and involved leaning in and considering. Sublimity had a positive valence that was spurred by a balance of fear and awe.

Preliminary analysis seems to confirm that awe, wonder, and sublimity are components of inspiration, but subsequent analysis and future research are needed to examine this idea more fully. In addition, since the goal of experiential education is to provide adventure and challenge to promote observation, reflection, critical thinking, and application (Gass et al., 2012), future research is needed to investigate if and how inspiration, awe, wonder, and sublimity influence this process.

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Multiple Perspectives of Inspirational Instruction in Outdoor Recreation: A Phenomenological Study

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Introduction

A decline in continued participation in outdoor recreation is raising concerns for the future sustainability of outdoor recreation (Outdoor Foundation, 2022). Outdoor recreation instructors serve as a means to inspire more individuals to engage in leisure in the outdoors. When facilitated by an instructor, education in a leisure pursuit can lead individuals towards the development of skills, values, and attitudes relevant to leisure (Sivan, 2017). Instructors, who are also commonly identified as coaches or educators, have been researched across leisure fields including music (Robinson, 2018), sports (Rocchi et al., 2013; Schempp, McCullick et al., 2005; Schempp & Johnson, 2006), and outdoor and adventure education (Mott & Martin, 2017; Povilaitis et al., 2019). Acting as a conduit between a participant and a leisure activity, the instructor has the capacity to influence the participant's development and continued engagement in the activity.

Background

While limited, research focusing on the influence of instructors on participants has indicated that instructors carry great capacity to affect and motivate their students' learning. The primary distinct behaviors of outdoor education instructors associated with student learning were fostering safety, being supportive, facilitating autonomy and role modeling (Povilaitis et al., 2019). Participants have also highlighted instructors play a significant role in "facilitating a supportive and safe learning culture (Mott & Martin, 2017). However, little is known of how outdoor recreation instructors develop behaviors, skills, and strategies that allow them to influence continued engagement among their students.

One phenomenon to examine within outdoor recreation that has received scant attention is inspiration (Cornejo-Araya & Kronborg, 2021; Sammons et al., 2018). Inspiration is a motivational state that moves a human to do something beyond the ordinary (Thrash et al., 2014). It must be evoked by another person, idea, or object, which first leads an individual to become aware of new possibilities in life. Such awareness then triggers a sense of transcendence and instills motivation within the individual to engage in a new goal, vision, or pursuit (Thrash & Elliott, 2003, 2004). A deeper understanding of promoting inspiration in outdoor recreation can contribute pedagogical knowledge and provide practitioners with implications on how to develop and enhance inspiring qualities and behaviours in outdoor instructors as well as to inspire students to continue learning about and engaging in an activity. The study's central research question - *How is inspirational instruction perceived by various stakeholders in the snowsports industry?* - seeks answers from multiple perspectives to gain a more comprehensive understanding of how inspiration is manifested in outdoor recreation.

Methods

Taking a phenomenological approach, this three-phase study examined and compared perspectives of experiences with inspirational instruction in outdoor recreation within the context of snowsports. Using multiple qualitative data collection tools, the study describes the essence of inspirational instruction from multiple perspectives and analyzes whether individual and stakeholder group perceptions suggest one, or more than one, shared meaning of the phenomenon. The first phase of data collection involved 30 hours of participant observations at a weeklong snowsports instructor academy facilitated by instructors nominated as inspirational to gather observational and real-time data on skills, characteristics, and interactions associated with inspirational instruction. The second phase of data collection involved interviews with 14 academy participants to learn of their individual experiences and reflections with inspiration from at least one of the nominated instructors. Informed by analyses of the first two phases, the third phase of data collection involved interviews with 12 of the nominated and

observed inspirational instructors to better understand how they inspire their students and how they developed the skills to inspire. Each phase of data collection underwent an independent constant comparative analysis. Major categories and sub-categories from each phase were then compared against one another to identify congruency and divergence in the experiences and meaning of inspirational instruction.

Findings

Inspirational instruction in outdoor recreation was found to be instruction which sparks or ignites students' interest, perceived competence, and self-confidence. Preliminary findings indicate that all perspectives represented in the study view purposeful teaching, masterful technical presentation, and genuine engagement and connection with students as primary elements of inspirational instruction in outdoor recreation. Purposeful teaching incorporates the instructors' intentional facilitation of experimental, exploratory, and playful instruction that creates puzzles and stimulates healthy confusion for students to grapple and solve. This teaching element promotes a positive learning experience in which the students gain ownership and confidence in what they learned and developed. Masterful technical presentation of both knowledge and skill provides students with clear descriptions and visualizations, critical for students to clearly understand the information taught and to become aware of what is possible. Genuine engagement and connection between the instructors and students is the third foundational element of inspirational instruction as instructors are able to recognize students as humans that bring with them their own unique skills, goals, barriers, and experiences that impact teaching and learning. Between all perspectives, it is evident that no single element or skill guarantees inspiration in outdoor recreation. Rather, the tactful blend of these elements offers opportunities for inspiration to occur.

Discussion

This work contributes a rich contextual understanding of inspiration in outdoor recreation and may contribute to understanding how to teach inspirational qualities and skills to outdoor recreation instructors. Providing instructors with the opportunities to learn and develop skills and behaviors associated with inspiration could contribute towards improving the frequency of participation in the outdoor recreation sector.

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The Impact of Adventure Education on Cognitive Flexibility and Intolerance to Uncertainty

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Background

“Intolerance to Uncertainty” (IU) is a psychological construct that refers to an individual's tendency to perceive uncertain situations as unbearable or threatening, leading to heightened anxiety and distress (Dugas, et al., 2007). The concept gained significant attention in psychological research during the past few decades. A recent meta-analysis found a significant association between intolerance of uncertainty and clinical symptoms of social anxiety, obsessive-compulsive disorder, depression, panic, eating disorders, and General Anxiety Disorder (GAD), with there being a strong association between IU and GAD symptoms (McEvoy et al., 2019). Thus, individuals high in IU tend to interpret ambiguous situations in threatening ways, leading to heightened anxiety and worry.

“Cognitive Flexibility” (CF) is an intrinsic property of a cognitive system often associated with the mental ability to adjust its activity and content, switch between different task rules and corresponding behavioral responses, maintain multiple concepts simultaneously, and shift internal attention between them (Lonescu, 2012; Scott, 1962). Researchers have specifically described cognitive flexibility as the capacity to shift or switch one's thinking and attention between different tasks or operations, typically in response to a change in rules or demands. Thus, greater cognitive flexibility is associated with favorable outcomes such as higher resilience to negative life events and stress in adulthood (Genet & Siemer, 2011). Both IU and CF have important implications for societal issues. We argue that both concepts provide a more in-depth level of understanding and appreciation of the potential outcomes associated with AE, particularly in aspects related to the development of effective interventions for anxiety disorders, decision-making, risk perception, and coping strategies, and use two Research Questions to examine the effect of participation in Adventure Education (AE) programs and IU and CF. In the first, RQ1, we examine the effect that AE has on IU while the second RQ2 examines the relationship between AE and CF.

Methods

Instruments

The Cognitive Flexibility Inventory (CFI) is a self-report measure developed by Dennis and Vander Wal (2010). CFI has a reliable two-factor structure, excellent internal consistency, and high 7-week test-retest reliability. This measure demonstrated good internal consistency and convergent validity with the Cognitive Flexibility Scale (Martin & Rubin, 1995). The CFI consists of 20 items, and scores range from 20 to 100; with higher scores indicating higher cognitive flexibility.

The IU Scale determines the emotional, cognitive, and behavioral responses to uncertain situations. The scale consists of 27 items. The internal consistency of the scale was .94, and the test-retest reliability was .74 (Buhr and Dugas, 2002). Subscales of the scale include “Uncertainty is sad and stressful,” “Uncertainty prevents action,” “Uncertain events are negative and should be avoided,” and “Uncertainty is not fair.” The internal consistency coefficient was $a = .93$, and the test-retest reliability coefficient was .66. (Sari & Dağ, 2009).

Sample

This study will use a two-group design where students will self-select into two distinct college courses. One of these courses features a 3-day backpacking trip as an integral component of its curriculum and will function as the experimental group. Conversely, the second course, devoid of the backpacking element, served as the control group. The participants span a diverse gender mix and are between 18 and 22 years old.

Data Analysis

In the upcoming study slated for the fall of 2023, data will be collected from both the CF and the IU Scale. These tools will be administered to the experimental and control groups before and after the intervention. Evaluation of the obtained data is planned to use the Mann-Whitney U test. The Wilcoxon Signed Sequence Number Test will be applied to the post-test scores of both groups, facilitating a comparison between the pre-test and post-test data across the experimental and control groups and assessing any significant differences between the two groups. The results will be presented and analyzed by the time of the ensuing conference.

Discussion

In this era of rapid technological advancements, societal shifts, and global challenges, uncertainty has become a defining hallmark. Living in such unpredictable times underscores the need for individuals to possess skills and strategies to navigate and adapt to unforeseen challenges. This study will describe the potential benefits of adventure education (AE) that align with this societal imperative.

AE programs, by their very nature, expose participants to structured environments where they encounter controlled risks and stressors. Through these experiences, students might not only learn practical skills related to the adventure activity itself but could also acquire broader cognitive and emotional capacities essential for navigating the complexities of our contemporary world, such as IU and CF. By confronting challenges in controlled settings like a backpacking trip, students might build resilience and develop strategies for dealing with unexpected situations, enhancing their tolerance for uncertainty. This could be an invaluable skill in our age of rapid change and unpredictable events. Furthermore, the insights gained from this study could have deeper implications for the field of AE. By starting to determine the roles of stress, anxiety, and risk in adventure education programs, educators and facilitators can better tailor their curricula to maximize benefits for participants. If exposure to certain stressors in AE programs leads to enhanced cognitive flexibility and reduced intolerance to uncertainty, then integrating such experiences might become more than just an educational endeavor. This study, therefore, serves as a foundational step in exploring the nuanced impacts of AE in the broader context of developing resilience and adaptability in the face of life's uncertainties.

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Eco-Anxiety of College Students in an Introductory Environmental Science Course

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Background

Eco-anxiety can be defined as, “the reactions of people to the ecological crisis, their efforts to manage the difficult emotions that arise, and their challenge to act constructively to alleviate ecological problems” (Pihkala, 2022, p. 3). Although the emotional impacts of concern for the environment are not new, the study of them in relation to environmental problems emerging from climate change is rapidly expanding. Surveys in the U.S. and globally have shown that young people are particularly concerned about climate change (Ballew et al., 2023; Hickman et al., 2020). Fraser et al. (2013) found that conservation professionals are especially susceptible to eco-anxiety due to their knowledge base and daily interactions with climate change topics.

This study expands prior research by gathering baseline data on eco-anxiety of college students enrolled in a large introductory environmental science course at a university in the Midwestern region of the U.S. Specifically, it is investigating: (1) To what extent are students experiencing eco-anxiety? (2) How does the level of eco-anxiety differ among different demographic groups and between students with and without personal experiences with climate change? (3) How are levels of eco-anxiety changing over time?

Methods

Survey data for this study are being collected every semester in a large introductory environmental science course that enrolls approximately 600 students per year. Students from many different majors take the course, as it fulfills university general education requirements and serves as a core course for an array of natural resource majors. After a pilot test in April 2023, data collection began in September 2023 with 331 students completing the survey (an 85% response rate for the face-to-face section of the course and a 55% response rate for the online section of the course). Survey data were collected using Qualtrics software and analyzed with SPSS.28. Participation was voluntary and survey responses were anonymous, as required by the university Institutional Review Board.

Several survey instruments for measuring eco-anxiety and climate anxiety have been developed, validated, and published in the past few years (e.g. Ágoston et al., 2022; Ballew et al., 2023; Clayton & Karazsia, 2020; Hickman et al., 2020; Hogg et al., 2021). Based on the research context and the questions guiding this study, the researchers chose to administer the English version of the Eco-Anxiety Questionnaire (EAQ-22) and the Eco-Guilt Questionnaire (EGuiQ-11) developed by Ágoston et al. (2022). The EAQ-22 measures two factors: habitual ecological worry and negative consequences of eco-anxiety, while the EGuiQ-11 measures the single factor of eco-guilt. The Cronbach alphas calculated in this study ranged from 0.90 to 0.93 and were very similar to those published by Ágoston et al. (2022). Also included in the survey was a general question about climate change concern for comparison to international data collected by Hickman et al. (2021), as well as questions about personal experience with climate change drawn from Clayton and Karazsia’s (2020) instrument and relevant demographic questions.

Results

Data revealed that many students who completed the survey are experiencing some level of anxiety and guilt related to environmental destruction and climate change. When asked, “How worried are you that climate change threatens people and the planet?” (Hickman et al., 2021), 7% were “not worried,” 21% were “a little worried,” 32% were “moderately worried,” 25% were “very worried,” and 13% were “extremely worried.”

The EAQ-22 intermingles statements measuring two factors: habitual ecological worry and negative consequences of eco-anxiety (Ágoston et al., 2022). The questionnaire uses a 4-point Likert scale ranging from (1) strongly disagree to (4) strongly agree; a higher score indicates a higher level of anxiety. In this study, the mean score on the habitual ecological worry factor questions was 37.6 out of 52 (a score of 72%) with $SD=9.1$. The mean score on the negative consequences of eco-anxiety factor questions was 14.3 out of 36 (a score of 40%) with $SD=5.3$. The EGuiQ-11 consists of 11 statements related to eco-guilt and uses the same 4-point Likert scale. The mean score was 25.4 out of 44 (a score of 58%) with $SD=8.2$.

When asked to respond to the statement, “I have been directly affected by climate change,” responses were 40 “yes,” 126 “maybe,” and 129 “no.” A comparison of these responses to habitual ecological worry, negative consequences of eco-anxiety, and eco-guilt scores revealed significant differences in all three based on personal experience with climate change (one-way ANOVA, Tukey HSD, $p < .05$).

Demographic questions gathered data on college major, gender, age, and size of hometown. Perhaps because these questions were at the end of the survey, only 295 of the 331 respondents answered them. Of this group, 53% were majoring in a natural resources subject, 82% grew up in a town with a population equal to or smaller than 25,000, and 51% identified as male. Almost all students were in the age bracket 18-25 years old. Significant differences in levels of eco-anxiety were only evident based on gender. Female and non-binary student scores were significantly higher than male student scores on habitual ecological worry, negative consequences of eco-anxiety, and eco-guilt (one-way ANOVA, Tukey HSD, $p < .001$).

Discussion

This study documents levels of eco-anxiety across demographic groups and time. It does not delve into how conservationists or environmental educators can respond to, and possibly make use of, eco-anxiety and eco-guilt. However, the results do raise questions about the desired level of eco-anxiety. When compared with a national sample of U.S. young people and an international sample from 10 countries as described in Hickman et al. (2021), students in this study appeared less worried about climate change. As more researchers use the EAQ-22 and EGuiQ-11 instruments (Ágoston et al, 2022), it will become possible to compare those results across populations as well. Additionally, future iterations of this research may want to incorporate questions related to hope or belief in competency to act (Li & Monroe, 2019) to explore aspects of eco-anxiety as a practical emotional response that spurs positive action (Kurth & Pihkala, 2022).

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Forms of Character Across Cultures: Initial Analysis from a Global Survey of Outward Bound Schools

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Background

The study of character development is rooted in ancient cultures (Edmonson et al., 2009) and promoting positive character has been a desire since the beginning of philosophy and psychology (Seider et al., 2017). Given this long history, there is still a lack of consensus around how to define character and what constitutes it (Etekkal et al., In press; Malin et al., 2017). Furthermore, different scholars employ the term "character" to describe distinct diverse sets of character attributes (Seider et al., 2017). This ambiguity is particularly evident in cross-cultural youth programs, underscoring the need for context-specific research on character.

While character development remains a continuous process throughout life, childhood and adolescence seem to be specifically crucial in establishing a foundation of character (Lerner 2019; Walker et al., 2017). Young people develop their character as they actively engage with a diverse range of contexts, including their families, schools, and extracurricular activities (Seider, 2012; Synder, 2014; Watts et al; 2021). Outdoor activities and experiential learning programs specifically, have been demonstrated to benefit adolescents' character development in various ways (Allison et al., 2018; Fuller et al., 2017; Meerts-Brandtsma et al., 2023). Some experiential learning programs focus on character development, and explicitly express character development in their mission statement. Outward Bound is one of the programs that has focused on character since its inception in 1941 and has developed across the world to 35 different countries.

The global reach and commitment to character development make Outward Bound schools an excellent platform for examining character with regard to culture. This study, therefore, delves into the definition and conceptualization of character in Outward Bound schools across diverse cultural contexts categorized by Inglehart and Welzel (World Values Survey, 2023). Beahr's (2011) taxonomy of character was used as the comprehensive framework for this study. Beahr (2011) has identified four distinct dimensions of character: moral, performance, civic, and intellectual character (Baehr, 2011; Hunter, 2008). Moral character comprises character qualities that empower individuals to make ethical decisions in morally challenging situations. Performance character encompasses character attributes that serve as instrumental tools in facilitating the development of intellectual, moral, and civic values. Civic virtues pertain to character traits necessary for active and responsible citizenship, ultimately contributing to the common good. Intellectual virtues encompass character attributes essential for sound judgment, ethical action, and the pursuit of knowledge, truth, and understanding (Arthur & Kristjánsson, 2022). In this study, we focus on moral, performance, and civic character since intellectual is the main concern of traditional schooling.

Methods

Data were collected from program directors in Outward Bound schools through an online survey. The survey collected opinions of program directors on character as conceptualized in the school and program design and included 17 countries. The data comprised of 105 participants from the following cultural groups: 11 (10.47%) African Islamic, 7 (6.66%) Catholic Europe, 26 (24.76%) Confucian, 25 (23.80%) English Speaking, 5 (4.76%) Latin America, 5 (4.76%) Orthodox Europe, 2 (1.90%) Protestant Europe, and 24 (22.85%) West and South Asia. Participants were presented with a list of 10 character values and were asked to choose up to five values that they believe are most important for adolescents to be encouraged to have. Moral character was measured by adding the frequencies of the moral indicators

“good manners”, “feeling of responsibility”, and “religious faith”. Performance character was measured by adding the frequencies of the performance indicators “determination, perseverance”, “hard work”, “independence”, and “thrift, saving money and things”. Civic character was measured by adding the frequencies of the civic qualities “tolerance and respect for other people”, “obedience”, and “unselfishness”. Descriptive statistics and chi-square test were used to analyze data.

Results

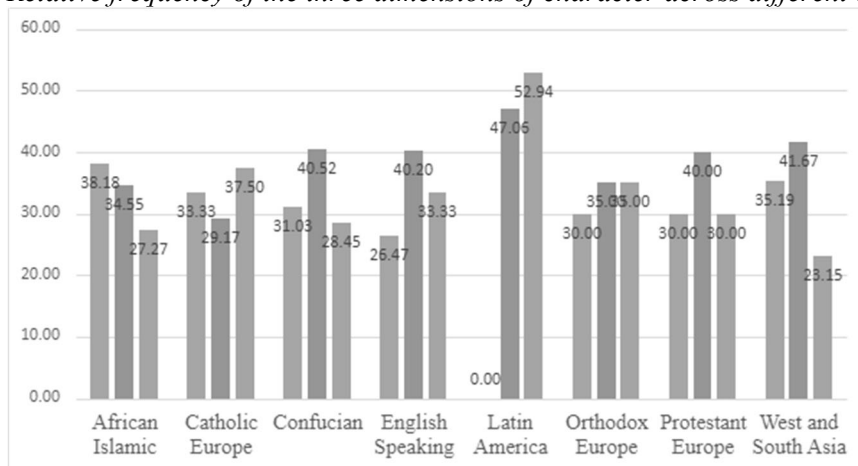
Descriptive statistics showed that among the different groups, the African-Islamic group exhibited the highest relative frequency of moral character dimension (38.18%), and the Latin America group displayed the highest relative frequency in performance character (52.94%) and civic character dimensions (47.06%). The Latin America group had the lowest relative frequency score for moral character dimension (0.00%). The lowest relative frequency score for performance character dimension was observed in the Catholic Europe group (29.17%). Finally, the West and South Asia group had the lowest relative frequency score for civic character dimensions (23.15%) (see figure 1).

The data also reveal that "Tolerance and respect for other people" was the top choice, selected by over 79% of participants across all groups. The second most frequently selected indicator was "Feeling of responsibility," chosen by more than 80% of participants, with the exception of the Latin America group (0%) and the English Speaking group (64%). In Latin America and the English Speaking group, the second most chosen character value was "Determination and perseverance".

The chi-square results showed that the difference in moral character across groups was statistically significant ($\chi^2(24, N = 104) = 36.29, p = .05$); However, no significant difference was found in performance and civic character across different groups.

Figure 1

Relative frequency of the three dimensions of character across different cultural contexts



Further qualitative data are currently being collected and analyzed to provide more nuanced insights and clarification of the above noted emerging categories of character, and of the world values map.

Discussion and Future Directions

The data reveals that among the three character dimensions, performance character received the highest level of attention in most cultural groups. This tendency could come from the relative ease of promoting values like determination, hard work, independence, and thrift in adolescents compared to moral and civic character values. However, recognizing that the performance attribute can be both positively and negatively applied, it is crucial to emphasize that all dimensions of character is needed. This holistic approach is essential for helping adolescents become healthy adults who actively contribute

to society. Initial findings suggest that these different categories of character might be thought of as doorways into character development.

The findings of this study not only contribute to cultivating a cross-cultural understanding, respect, and appreciation for the rich diversity in the world, but also assists educators, and policymakers in designing educational programs and support systems that are culturally sensitive and relevant.

Future research employing larger sample size, diverse methodologies and longitudinal data would provide a more comprehensive understanding of the complex interplay between character dimensions over time.

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A Cultural Risk Assessment of Led Outdoor Activities

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Background

Led outdoor activity (LOA) programs are intentionally designed to achieve desired learning outcomes by engaging participants with challenges that include a component of risk (Zink & Leberman, 2001). However, these risks can result in incidents in the LOA context, such as injury and even death (Brookes, 2011). For example, the fatal Mangatepopo Canyon incident in Tongariro National Park, New Zealand, resulted in the drowning of six students and one teacher during a gorge walking activity (Brookes et al., 2009).

LOA literature has long advocated for the inclusion of participants' subjective experience—which can be different than program staff's perspective of risk—in the risk management process (Davis-Berman & Berman, 2002; Mitten, 1994; Zink & Leberman, 2001). As LOA participants are many and varied, incorporating subjective constructs of risk requires consideration of the diverse cultural perceptions of everyone involved. As programs increasingly endeavor to reach diverse participant groups, the LOA sector requires cultural and social competency to understand the impact of programs on participants' lives (Chang et al., 2016; Mitten, 1994; Prouty, 1996; Waite & Pleasants, 2012). DEI work and social and emotional safety intersect with the LOA sector's ongoing efforts to reconstruct the use of risk for more effective educational, therapeutic, and developmental means (Davis-Berman & Berman, 2002; Mitten, 1994).

Cultural risk impacts LOA programs (Mitten & Itin, 2009), however, little research has explored the extent of cultural risk introduction and potential impacts to the LOA work system through current safety science approaches. This study asserts that the cultural perceptions of groups of people and cultural influences on systems' design effects issues of risk and safety in LOAs. This intersection represents cultural risk. However, the extent and potential that cultural risks impact LOA programs are unknown and little research has explored this thinking through current safety science approaches.

Methodology

To examine culture's impact on risk and safety, this study adapted the Networked Hazard Analysis Risk Management System (Net-HARMS), a state-of-the-art risk assessment method (Dallat et al., 2017; 2023), to identify cultural risks. For a full description of the original Net-HARMS method please see Dallat et al. (2017).

An expert analysis was conducted using the cultural NET-HARMS adaptations for a mock five-day LOA program. Results were analyzed for trends applicable to future research and practice aimed at identifying and mitigating cultural risks in LOAs. These results were then analyzed for validity using signal detection theory (SDT: Stanton et al., 2009; Stanton & Stevenage, 1998) and Matthews Correlation Coefficient (MCC; Chicco & Jurman, 2020).

Results

Findings indicate that cultural factors have an emergent effect on risk and safety issues through task objects, such as policy and procedure, imbedded assumptions in communication messages, and programs' impacts on local people.

Overall, the cNet-HARMS expert analysis achieved acceptable levels of validity. Utilizing SDT (see Dallat et al., 2023; Stanton & Stevenage, 1998), cNet-HARMS achieved an acceptable score of 0.98 and an acceptable false alarm rate of 0.22. Additionally, the MCC (Chicco & Jurman, 2020) scores for pooled data was calculated to be 0.47, indicating a positive correlation between SME participants' risk identifications and those observed in the expert analysis. In total, 3,648 risks were identified from the 18 tasks assessed. Of these, 90 were task risk predictions. When compared with the same sample from the

original Net-HARMS analysis, cultural factors influence risk substantially more in task objects, such as manuals, plans, and equipment (T4), and in communication (C1-C4) and environmental (E1) risks whereas inadequate task completion (T3) and task omission (T2) are more prominent risks when culture is not explicitly considered.

Discussion and Conclusions

The cNet-HARMS risk assessment conducted for this study considered the subjective experiences of participants and local people involved in LOA programs, and the potential that their personal experiences combined with program systems could contribute to risks of physical harm. As a result, this study demonstrates that cultural perspectives play a crucial role to risk and safety in the LOA context. This study supports the theoretical perspective that cultural risks emerge when peoples' social and historical perspectives intersect with work systems' cultural design influences.

Moreover, it demonstrates that when the Western dominant adventure paradigm of LOA programs misalign with the cultural perceptions of program participants and the local people, the number of risks introduced into the system grows exponentially. When compared to the original Net-HARMS expert analysis (Dallat et al., 2017) from the same sample of the same task network, incorporating multiple cultural perspectives into the method yields an astounding 400% in potential opportunities to introduce risks into the system. These findings support the theory of intersectionality (Crenshaw, 1988) and give further evidence that when social identities are considered in context with structural systems, the results are not only disproportionate, but the potential for impact is compounded.

This study demonstrates that cultural risk is not directly responsible for accident causation. Instead, it influences the logical design and social programming of a web of contributory factors that work together to influence risk and safety. Because cultural factors influence both the social and technical elements that make up the LOA system, LOA programs require culturally sensitive design. By including, honoring, and examining the multiple cultural perspectives of LOA participants, the program paradigm and local people, the LOA field can make meaningful progress toward a more equitable, inclusive, and safer adventure paradigm.

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It is So Much More Than Just a Four-Day Residential: The Profound Effects of Supporting Young People Experiencing Homelessness to Thrive in the Outdoors

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Mark Holland, Newman University
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Background

The outdoors is not an accessible space for all (Ho & Chang, 2021). Often, those who could most benefit from the transformative experiences of time spent in the outdoors, namely the positive effects on mental, emotional, and social health (MESH) (Twhig-Bennett & Jones, 2018), can feel excluded from such opportunities. A group that may feel particularly isolated from the outdoors is young people experiencing or at risk of homelessness – a population typically overrepresented in cities, urban environments, and low-income communities (Morton et al., 2018).

Youth homelessness encompasses a wide range of situations, including living on the streets, residing in insecure housing, sofa-surfing, or living in supported accommodation (National Alliance to End Youth Homelessness, 2021). Despite variations in how homelessness can manifest, young people commonly share experiences of family estrangement, school behavioral challenges, social isolation, and mental health issues (Medlow et al., 2014). These challenges are exacerbated during late adolescence and emerging adulthood (16-25 years). Furthermore, late adolescence and emerging adulthood are critical developmental periods where interventions can prevent long-term homelessness (Morton et al., 2018; National Alliance to End Youth Homelessness, 2021; Semborski et al., 2021). Alongside the need to support young people experiencing homelessness (16-25 years) into safe and affordable housing, research also underscores the importance of interventions that nurture MESH and skill development outcomes (Quinton et al., 2021; Semborski et al., 2020). This presentation proposes that outdoor-based programs are a viable solution to promoting MESH and skill development outcomes for this demographic, and makes the case through compelling firsthand experiences and empirical evaluations of the My Strengths Training for Life™ (MST4Life™).

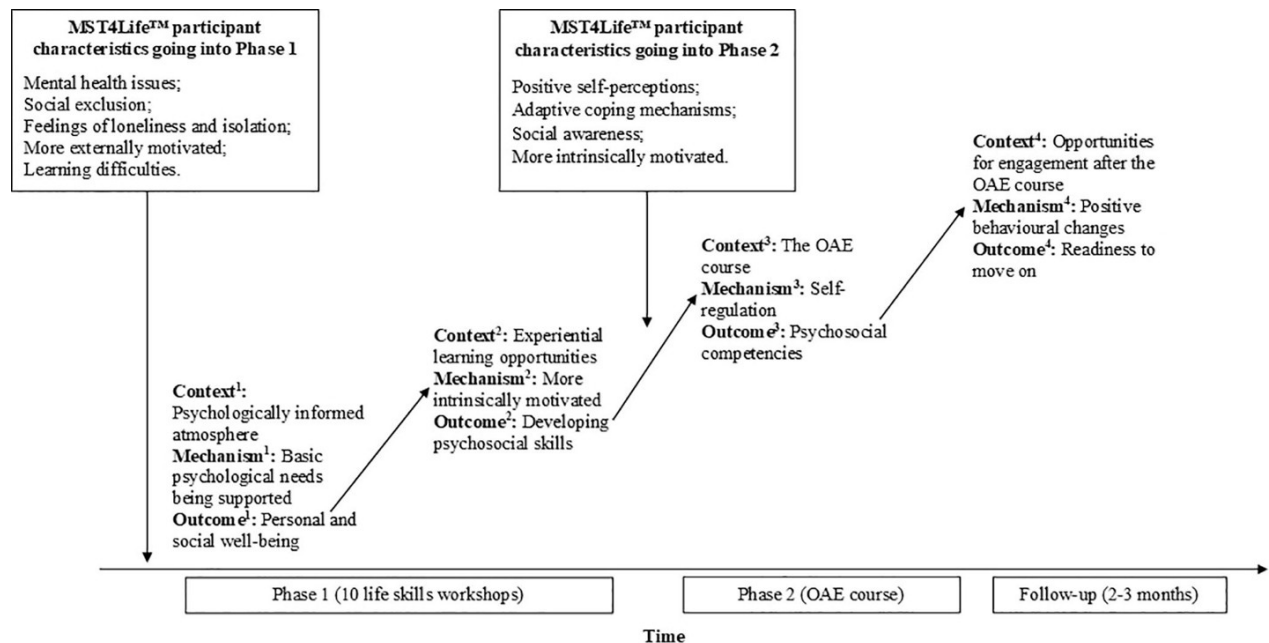
Grounded in sports psychology and positive youth development, MST4Life™ emerged from a research- community partnership between the University of Birmingham, UK, and the youth housing organization St Basils. Tailored for young people experiencing homelessness (16-25 years), the program featured ten weekly life skills workshops at St Basils housing centers (Birmingham, UK) and a 4-day residential at an outdoor pursuit center (Lake District, UK). When the program was conceptualized in 2014, there was no existing research into using the outdoors as a setting for well-being and skill development benefits in young people experiencing homelessness. However, members of the research team had already conducted research that demonstrated the benefits of utilizing an outdoor adventure education (OAE) program for developing transferable skills in students (Cooley et al., 2015). Broader literature also highlighted the developmental and well-being benefits of outdoor programs for socially disadvantaged young people (e.g., Norton & Watt, 2014). In addition to the supporting evidence, the idea of integrating the outdoors into the program was welcomed by adult and youth stakeholders within St Basils.

Dr. Benjamin Parry draws upon five years of experience working on and evaluating the MST4Life™ program as a Ph.D. student and associate researcher. The presentation focuses on two peer-reviewed studies: (1) a qualitative realist evaluation of MST4Life™ (Parry et al., 2020) and (2) a theory-informed, collective case study of participants' outdoor experiences (Parry et al., 2021). The findings from these studies provide powerful examples of intra- and interpersonal development in the outdoors, as well as mechanisms of change during the program as a whole, including pedagogical approaches and theory-informed strategies for implementation (see Figure 1). The presentation will also cover lessons learned from the realities of meeting the complex and cooccurring support needs of young people

experiencing homelessness during an outdoor residential. To this end, recommendations for creating a psychologically safe and supportive program atmosphere when guiding groups unfamiliar with the outdoors into nature-based programs will be discussed.

Figure 1.

A conceptual overview of MST4Life™ produced through a qualitative realist evaluation of the program (Parry et al., 2020).



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The Relationship of Childhood Outdoor Experience and Gender with College Students' Initial Levels of Outdoor Program Outcomes and Subsequent Changes over Time

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Background

Outdoor pursuits programs have the potential to greatly impact their participants by immersing them in the natural world for extended periods of time. Often placed in unfamiliar and/or uncomfortable environments, participants not only face physical and emotional stresses or challenges, but they also must focus on working with others to accomplish basic survival skills. Research on the outcomes of such programs have identified positive individual effects, such as fostering psychological resilience, well-being, sense of place, and nature-relatedness, plus positive social changes, such as building sense of community over time (Todd & Shellman, 2014; Todd et al., 2016). In terms of comfort in outdoors environments, Ewert (1988) and Ewert and Young (1992) found that social fears were more anxiety-producing than physical ones for college students, but 30 years later, the reverse was true (Todd, Kovatchitch & Young, 2018), perhaps reflecting less time spent outdoors during childhood. Indeed, Todd, Young, Costello & O'Connell (2022) found that childhood exposure to the outdoors was positively related to young adults' comfort levels in the outdoors. In addition, females experienced significantly higher levels of fear than males in all five studies. Similarly, Ward and Hobbs (2006) found that levels of experience and comfort in the outdoors were negatively associated with fear in collegiate outdoor programs and that gender affected perceptions of fear.

This study explored the impact of an outdoor education practicum on participants' sense of community, sense of place, nature-relatedness, resilience, well-being, and outdoor fear. While these dependent variables have been shown to change as a result of participation in outdoor pursuits programs, do they increase (or decrease) for males and females alike (and if so, to the same degree)? Is childhood outdoor experience/comfort a causal-comparative factor, and how does this variable interact with gender?

Methods

A total of 163 students (including recreation, outdoor recreation, recreation management, and therapeutic recreation majors plus environmental and outdoor education minors) completed a 13-day Outdoor Education Practicum in New York's Adirondack Park during May/June of 2018 (n = 46), 2019 (39), 2021 (41), 2022 (13), and 2023 (25). While the course was required for a vast majority of participants (160 undergraduates), it was an elective for 3 graduate students. The final course population included 104 females and 59 males.

The main objectives of the course were three-fold: honing outdoor skills, building a sense of community, and experiencing personal growth. To accomplish this, participants simulated a centralized camp during the first five days, with activity blocks focusing on outdoor skill instruction, feedback, and refinement plus programmatic blocks designed to enhance community building. Participants then applied these skills and built relationships among a small group of 6 to 9 people (4-7 students and 1-2 staff) on a six-day canoe trip, modeling a decentralized camp. Finally, they reunited as a large camp to debrief the experience during their last two days.

All but one student (response rate = 99.4%) agreed to participate in the research study. Three times during the course – pre (Day 1), mid (after in-camp instruction on Day 4), and post (after the canoe trip on Day 12) – participants completed a version of the Situational Fear Inventory (SFI) (Ewert, 1988) by marking slashes on 100-millimeter lines anchored by “not at all anxious” to “very anxious” for 22 physical and 20 social potentially fearful situations. On Day 1 (pre) and Day 12 (post), respondents completed surveys measuring resilience and mental health using Wagnild and Young's (1993) 25-item Resilience Scale and Keyes' (2009) 14-item Mental Health Continuum Short Form. Additionally, on Day 3, when participants met their trip groups for the first time, and Day 11, when they returned from their canoe trips, respondents completed the 8-item Brief Sense of Community Index (Long & Perkins, 2003); 6-item Nature Relatedness Scale (Nisbet & Zelenski, 2013); and 9-item Sense of Place Scale (Williams

& Vaske, 2003; Kyle, Norman, Jodice, Graefe & Marsinko, 2007). Starting in 2019, prior to the course, students filled out the childhood portion of the Outdoor Experience and Comfort Index (OECI) (Feille, n.d.) by indicating whether 23 outdoor-related statements did or did not describe their childhood.

Dependent t-tests compared changes in program outcomes' mean scores over various points in time (e.g., pre to post). Independent t-tests compared females and males in two ways: first, by comparing pre-test mean scores of targeted outcomes and OECI; second, by comparing the magnitude of their gains or losses over time (i.e., differences between pre and post mean scores). Pearson product moment correlations were then used to analyze the association between OECI and initial program outcomes, as well as OECI with changes over time (i.e., amount of gains/losses in program outcomes). Finally, these correlations were again calculated for females and males to unmask any differences in those relationships.

Results

Dependent t-tests showed that respondents experienced significant changes over time for all outcomes. Significant increases were documented for sense of community (pre $m = 3.9$, post $m = 4.3$), sense of place (pre $m = 3.0$, post $m = 3.2$), nature-relatedness (pre $m = 4.0$, post $m = 4.1$), well-being (pre $m = 51.7$, post $m = 58.4$), and resilience (pre $m = 139.5$, post $m = 148.3$). On the other hand, situational fears decreased significantly over each point in time (pre $m = 30.8$, mid $m = 28.1$, post $m = 18.2$). When split by gender, dependent t-tests echoed identical significant changes for females and males.

Independent t-tests revealed that females and males did not differ significantly at the start of the course in mean scores for childhood outdoor experience and comfort, sense of community, sense of place, nature-relatedness, well-being, or resilience. They did, however, differ significantly in terms of initial situational fears ($t(159) = 3.99, p < .001$), with females ($m = 35.4$) recording statistically higher levels of fear than males ($m = 22.5$).

Likewise, when using independent t-tests to compare the extent of females' and males' gains or losses over time (i.e., differences between pre and post mean scores), females and males did not differ significantly in terms of gains in sense of community, nature-relatedness, sense of place, well-being, or resilience. However, females reported significantly larger decreases in fear than males ($m = -14.8$ versus -8.5) from pre to post ($t(157) = 2.63, p < .01$). In fact, using a one-way between-subjects ANCOVA to control for the effect of pre-fear, the main effect for gender was not significant ($F(1,156) = .190, p > .05$). By the end of the course, females ($m = 20.5$) were not significantly more fearful than males ($m = 13.9$) after covarying out the effect of pre-fear.

As expected, levels of childhood outdoor experience and comfort (OEC) were significantly positively correlated with initial levels of sense of place ($r = .49, p < .001$), nature-relatedness ($r = .54, p < .001$), and resilience ($r = .26, p < .001$). Moreover, levels of childhood OEC were negatively correlated with initial levels of fear ($r = -.49, p < .001$). On the other hand, childhood OEC was not significantly related to initial sense of community or well-being.

Childhood OEC was not significantly related to the magnitude of change over time (i.e., amount of gain) for sense of community, sense of place, nature-relatedness, resilience, or well-being. In other words, regardless of childhood outdoor experience/comfort level, all respondents experienced similar increases in those variables over time. However, childhood OEC was significantly correlated with degree of change in fear from pre to post. The less the childhood OEC, the greater the reduction of fear over time ($r = .32, p < .001$).

These relationships shifted when splitting the data by gender. As noted previously, females and males did not differ in childhood OEC; however, correlations showed that OEC differentially affected the groups. The association of childhood outdoor experience/comfort was more pronounced for females than males for initial sense of place ($r = .52$ versus $.45$, both $p < .001$) and nature-relatedness ($r = .57$ versus $.50$, both $p < .001$), and childhood outdoor experience/comfort was significantly related to only females' initial sense of fear ($r = -.67, p < .001$ versus males' $r = -.27, n.s.$) and resilience ($r = .51, p < .001$ versus males' $r = -.07, n.s.$).

Similarly, correlations between OECI and gains/losses in pre to post scores revealed a different pattern among females and males. Males' childhood OEC was not significantly correlated to gains or

losses in any variable. For females, the less the childhood OEC, the larger the reduction of fear over time ($r = .41, p < .001$), the larger the increase in sense of place ($r = -.28, p < .05$), and the larger the increase in resilience ($r = -.25, p < .05$).

Discussion

Consistent with past research, this study verified that outdoor education programs can effectively help college students increase their sense of community, sense of place, nature-relatedness, well-being, and resilience as well as reduce their outdoor-based fears. Although females and males do not differ in terms of childhood outdoor experience/comfort (OEC) or initial levels of most targeted outcomes, females do perceive higher levels of initial fear than males. Likewise, females and males experience similar gains in all outcomes, but females experience larger decreases than males in fear.

Programs such as forest pre-schools and adventure day camps should be encouraged by this study's findings that spending time outdoors during childhood is related to college students' greater attachments to place, stronger abilities to relate to nature, higher levels of resilience, and lower levels of fear. Gender and childhood OEC do interact, however. For females only, the greater the OEC, the lower the initial fear, the higher the initial resilience, and the greater the impact programs have in terms of reducing fears and increasing resilience and sense of place.

More research is needed to determine how females' and males' perceptions of outdoor fear, sense of place, and resilience are formed and influenced. Why does childhood outdoor experience/comfort seem to be more impactful for females than males, not only in terms of reducing fears of the outdoors, but also in building resilience and closer connections to place? Khajavei (2017) noted that the benefits of outdoor programs are often more difficult for females to attain due to gender norms, low self-esteem, fear, and lack of skills gained during youth. Also, why is well-being not related to childhood outdoor experience/comfort?

Based on these data, outdoor educators can intentionally design programs to build connections with people, places and nature that could foster resilience, well-being, ecological concern, and comfort in the outdoors. These connections may be of critical importance as children seemingly disengage from nature in the digital age. Perhaps COVID's influence on increased time in the outdoors will positively impact this generation of children's future outdoor use and related outcomes.

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Gender Differences in Appalachian Trail Thru-Hikers

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Introduction

The Appalachian Trail (AT) is a 2,194.3 mile hiking trail, stretching from Georgia to Maine. Approximately 3,000 hikers attempt to thru-hike every year and about 25% complete the trail. A thru-hiker is a backpacker who completes a continuous long-distance trail, within a single year, in approximately 5½ to 7 months (Appalachian Trail Conservancy, 2023a). During the first few decades of the AT, women comprised less than 15% of thru-hikers and were less likely to complete the entire thru-hike for reasons unknown (Boulware, 2004). Yet in 2018, women were a third of thru-hikers (Appalachian Trail Conservancy, 2023b), and this percentage continues to increase with over 42% of thru-hikers now women (The Trek, 2022). Although recent research examines unique challenges and experiences of women thru-hikers (Botta & Fitzgerald, 2020; Crowley, 2018; Jacobs, 2018; Howard & Goldenberg, 2020), little research has compared whether gender differences exist for men's and women's experiences on the trail.

Several studies have been conducted on the benefits (Goldenberg & Soule, 2014; Hill et al., 2014; Mayer & Lukacs, 2021) and challenges (Cole & Thomsen, 2021) of thru-hiking. Very little research has examined hikers experience during and shortly after their experience. The purpose of this study was to investigate the attitudes, beliefs and persistence of hikers. Gender differences in hikers' attitudes and experiences during and after a thru-hike on the AT were analyzed.

Methods

Participants completed the Personality and Attitudes among Appalachian Trail Hikers (PAATH) Survey which was created by the researchers to examine attitudes, beliefs, personality factors, and persistence among hikers, as well their post-hike experiences. Participants completed a survey (Time 1) either with a QR code posted in hostels, outfitters, and on billboards at trailheads; a paper form completed on the trail; or as a form returned via mail. All participants completed the survey within the first 700 miles of their thru-hike experience. The first survey asked whether survey respondents were willing to be contacted via email for a series of follow-up questions regarding their completion of the AT. The follow-up survey (Time 2) was sent approximately 4 months after completing the first survey. At Time 1, participants were asked to report their beliefs regarding their confidence and worries about the hike. This included: preparation for the physical challenges; preparation for emotional/psychological changes; concerns about crime, assault, or harassment; concerns about injury or sickness; managing natural elements like weather or wildlife; ability to complete the hike; knowledge about the trail; managing food and water; maintaining health and hygiene; knowledge about safety, risk management, and first aid. At Time 2, participants answered questions about the status of their hike and 13 questions about post-hike perceptions of the benefits of hiking. This included questions about impact on physical wellbeing, fitness, and health; psychological wellbeing; outlook toward humanity; sense of accomplishment; appreciation/satisfaction with life; self-awareness; self-reliance/independence; sense of empowerment; sensitivity, patience, and tolerance toward others; personal connection to nature; appreciation for relationships with family; chance to think about plans for the future; and getting away from electronics, work, and society.

Results

A total of 232 participants who identified as thru-hikers completed the survey during Time 1 either by via a QR code (25.9%), paper format on the trail (72%), or as a paper form returned in the mail (2.2%). Approximately, 19% of the sample were recruited within the first 55 miles of the trail, and the remaining 81% were recruited between mile 500 and 700 of the AT. A total of 126 participants completed

the second survey (Time 2) via email. Of the participants, 62.5% were men, 31.5% female, 1.3% non-binary, 0.4% preferred not to report and 4.3% did not report. Across the 10 questions about attitudes during the hike at Time 1, significant gender differences were found in three areas. Women were significantly more worried about the potential for crime, assault, and harassment from others during their hike ($M = 1.88$, $SD = .96$) compared to men ($M = 1.58$, $SD = .92$), $d = .32$. This disparity was strongest among women and men who were surveyed after completing at least 500 miles of the trail. Women's concerns appear to grow over time. Women were significantly more worried about managing natural elements like the weather and wildlife ($M = 2.74$, $SD = 1.14$) compared to men ($M = 2.24$, $SD = 1.04$), $d = .46$. Men were significantly less confident that they had adequate knowledge about maintaining their health and hygiene ($M = 4.26$, $SD = .82$) compared to women ($M = 4.56$, $SD = .59$), $d = .40$. The largest differences were observed between men and women who had completed at least 500 miles of the trail, and men's confidence appears to decrease over time. There were no significant differences in previous hiking experience in term of longest distance hiked on a multi-day trip or longest number of days on the trail. Overall, men and women viewed themselves to be capable to accomplish their thru-hike.

Across the 13 questions about post-hike perceptions of the benefits of hiking, significant differences were found between men and women within three areas. Men reported a larger increase in appreciation for family relationships ($M = 4.21$, $SD = .94$) compared to women ($M = 3.81$, $SD = 1.12$), $d = .39$. Women reported gaining a greater sense of empowerment from the hike ($M = 4.63$, $SD = .79$) compared to men ($M = 4.25$, $SD = .75$), $d = .50$. Women agreed with the statement that the hike gave them a chance to think about their plans for the future ($M = 4.07$, $SD = 1.121$) more strongly than men ($M = 3.57$, $SD = 1.271$), $d = .41$. No significant differences were found within hike completion rates.

Discussion

Overall, evidence for gender differences within hikers' attitudes was limited. Significant gender differences were found in a few domains, but overall gender differences were small. Both men and women felt that they had the ability to complete their hike and were confident about their knowledge and planning of their hike. Additionally, they felt physically and mentally prepared for the thru-hike. Comparisons between hikers who were just beginning their hike and hikers who had completed at least 500 miles of the trails suggest that women's concerns about crime, assault, and harassment became stronger over time on the trail. Whether these changes in attitudes reflects direct experience with actual problematic encounters women have had or whether these concerns grow due to other factors deserves further investigation. Future investigations would benefit from a larger sample of hikers who were just beginning their hike.

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Could We Lose Access to Our Classrooms? A Data-based Discussion About Land Management Decisions that Limit Access to Protected Areas

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Background

Access to protected areas is critical to outdoor education programs. However, heavy use by different user groups has caused land management agencies to implement management practices to ensure the sustainability of natural areas for future generations. Some of these management practices result in diminished access to outdoor education programs. This presentation will briefly provide data from a research effort to assess the social and physical impacts of a popular trail system managed by the US Forest Service. The objective of this proposed presentation at CEO is to create awareness (and spark a conversation) among outdoor educators to better understand the decision processes land management agencies use to develop management policies, how those decisions might restrict access to outdoor education programs, and how outdoor educators might engage with agencies in proactive ways to protect access to their outdoor “classrooms.”

The importance of the outdoors as an effective educational “classroom” and place for facilitated personal development is well-documented in literature ranging from traditional education contexts (Davis et al., 2006; Rios & Brewer, 2014); to outdoor environmental education (Jose et al., 2017); to adventure education (Daniel et al., 2014; Passarelli, 2010). In many cases, outdoor and adventure education programs rely on access to protected areas as the setting for their programs.

Despite their important missions, educational programs do not have priority access to protected areas, as land managers must also consider the competing interests of commercial enterprises (recreational and otherwise) and individual users. Visitors to these protected areas inevitably leave their mark, whether through trampled vegetation, eroded trails, creation of campsites, overcrowding, or conflicts among recreationists (Marion & Reid, 2007). As demand for protected areas has increased (U.S. Department of Agriculture, 2021; U.S. Department of the Interior, nd), and funding to address the impacts of overuse has lagged, land managers must implement policies to balance their dual mandates of protecting natural resources and facilitating recreational, educational, and commercial activities (Marion & Reid, 2007). For example, lottery-based permit systems have been implemented for popular river systems in the western US. While helping to create more sustainable recreation areas, this permit system has resulted in competition for access. Whether rivers, trails, lakes, or climbing spots, most outdoor educators, regardless of geographic location, can think of a nearby recreational site that is overused, and many have experienced loss of access.

As land managers consider policies to manage overuse and create more sustainable protected areas, they often require data to help identify and prioritize management practices. Often for reasons of expertise and credibility, they look to academic researchers to study the social and physical impacts of recreation spaces in protected areas. This presentation presents data from one such study of a well-used trail system in Michigan’s Huron Manistee National Forest. In addition to sharing a summary of the collected data, which quantifies the social and physical impacts on the trail system, the presentation will discuss how this data will impact potential management decisions that could limit access for outdoor educators. The goal of this particular outlet for this study is to facilitate a productive conversation among outdoor educators about how to best protect, or increase, their access to outdoor “classrooms” located in protected areas.

Method

The Manistee River Trail (MRT) runs for 11 miles along the east side of a natural stretch of the Manistee River in the northern lower peninsula of Michigan. Bridges at each end of the trail allow access

to a section of the North Country Trail (NCT) that runs parallel to the MRT on the West side of the river. Together, the two trails, and their connectors, comprise a 22-mile loop that has been a very popular 1-2 night backpacking loop for decades. The MRT runs very close to the Manistee River and offers near-constant views of this beautiful winding river, as well as the many creeks and streams that pour into the river from the east. The NCT section is far enough away from the river that it offers no views of the Manistee River. However, it runs through mature hardwoods and pines and includes the highest point in the lower peninsula of Michigan (Briar Hill at 1,706 ft.).

In the winter of 2022/23, we installed trail counters at eight spots along the trail and on access spurs. These trail counters provide visitor numbers on an hourly basis allowing us to identify temporal use trends, peak times, and travel patterns. In the summer of 2023, we conducted a census of the MRT trail system to identify, map, and take measurements and observations of every campsite (designated and non-designated), informal trail, and trail problem spot (spots of heavy erosion or mudding). Additionally, we took measurements and observations at spots every 1,000 ft. along the trail to assess its overall condition and sustainability.

Findings

The measurements and observations of trails, campsites, viewpoints and problem spots yielded over 4,000 individual pieces of data. We identified and assessed 128 campsites (only 22 were designated), identified and mapped 194 trail problem spots and 168 informal trails (over 9 miles worth), and took transect measurements and observations at 45 spots along the trail. Detailed analysis of this data is ongoing, however, preliminary findings show that 86% (105) of the campsites violate the requirements that campsites be located at least 100 ft. from the trail and 200 ft. from water. Moreover, of the campsites in violation of policy, 82% are well-established and experience high use, accentuating the challenge of transitioning to a sustainable solution for campsites in the system.

Despite expecting significant physical impacts on this well-used trail, local US Forest Service leaders were surprised by the extent of the physical impact of recreation on the 11-mile section of the MRT. In December 2023, we will be facilitating a session with National Forest Leaders to help them prioritize areas that need rehabilitation and to help the US Forest Service consider management practices and policies to ensure the sustainability of this well-loved resource. This meeting with the US Forest Service leaders will provide insights into the decision-making process at the Forest Service and will serve as the basis for much of the recommendations and discussion for this presentation as we facilitate a conversation about ways outdoor leaders can engage with land managers to protect and advance their interests.

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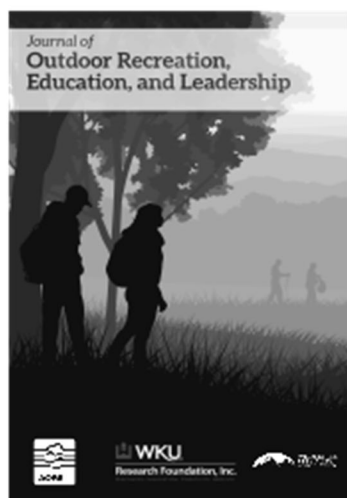
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Journal of Outdoor Recreation, Education, and Leadership

Special Issue: Call for Papers



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Guest Editors:

N. Qwynne Lackey, PhD

Kendra Liddicoat, PhD

Lisa Meerts-Brandsma, PhD

A forthcoming (fourth quarter 2024) special issue of the *Journal of Outdoor Recreation, Education, and Leadership* will feature full-length papers based on abstracts presented at the Coalition for Education in the Outdoors (CEO) 16th Biennial Research Symposium held at the YMCA Blue Ridge Assembly conference center in Black Mountain, North Carolina, USA. Authors who presented their work at the symposium are invited to submit regular papers; essays, practices, and commentaries; and research notes for consideration for inclusion in this special issue. We encourage submissions representing all three categories. All manuscripts submitted will undergo the normal peer-review process and should adhere to the author guidelines

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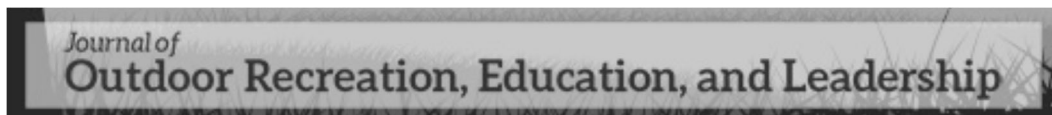
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