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Complementing classroom learning through outdoor adventure education: out-of-school-time experiences that make a difference

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ABSTRACT

Recent research underscores the importance of the skills, beliefs and behaviors that support student achievement in the classroom and beyond. This set of intrapersonal and interpersonal assets (e.g. perseverance, grit, social skills, efficacy beliefs and mind-sets) are often referred to as noncognitive factors, as they are not measured directly by traditional academic assessments. Outdoor adventure education (OAE) is well positioned to deliver these desired outcomes—boosting self-confidence, selfefficacy and social skills while developing leadership and communication competencies. Therefore, the primary aim of this study was to better understand the form, function and delivery of an effective OAE program/ school partnership targeting factors that support student success. Findings explain how shared OAE experiences among adolescent girls attending the same school contribute to greater social connectedness, self-efficacy in leadership competencies, and a recalibrated sense of self and personal potential.

KEYWORDS

Noncognitive factors; residential learning; outdoor adventure education; adolescents; self-efficacy; growth mind-sets; sense of belonging

In our pursuit of educational reform, something essential has been missing: the psychology of the student. (Dweck, Walton, & Cohen, 2011, p. 2)

The most important attitude that can be formed is that of desire to go on learning. (Dewey, 1938, p. 32)

It is hard not to agree with Carol Dweck and John Dewey on these two points, published 73 years apart: student beliefs about themselves and their motivational dispositions toward learning matter. Yet, the importance of student psychology is often lost in discussions of education, particularly in debates related to the education gap between students from low socioeconomic backgrounds and students from more affluent households. In recent years, research has brought attention back to intrapersonal and interpersonal factors that support student success. Angela Duckworth made the case that *grit*—the ability and desire to follow through on long-term goals—was a stronger predictor of long-term success than IQ (Duckworth, Peterson, Matthews, & Kelly, 2007). Dweck articulated how growth mind-sets toward intelligence and learning contribute to student motivation and perseverance (Dweck, 2006). Related research highlights the importance of social belonging, self-confidence, self-efficacy and other factors on student attitudes toward school, effort and, ultimately, academic achievement (Dweck et al., 2011; Snipes, Fancsali, & Stoker, 2012; Yeager & Walton, 2011). Collectively, these psychological factors and related behaviors are sometimes referred to as *noncognitive skills* as they cannot be measured directly by traditional academic assessments (Heckman & Rubinstein, 2001; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013).

These factors are especially important during adolescence, when student motivation is vulnerable to increased academic expectations and shifting social dynamics (Blackwell, Trzesniewski, & Dweck, 2007; Lansford, Killeya-Jones, Miller, & Costanzo, 2009). Educators and policy-makers are now looking for innovative ways to cultivate student mind-sets, beliefs and behaviors as these are relatively malleable compared to cognitive ability (Farrington et al., 2012).

There is renewed interest in the United States in understanding how out-of-school-time (OST) activities, particularly those associated with school, can support student success (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Farb & Matjasko, 2012; Putnam, Frederick, & Snellman, 2012). School-related OST experiences include sports, clubs, arts programs and volunteer service. Recent studies have found intriguing connections between school-related OST participation and the development of particular noncognitive factors that support classroom learning. Such outcomes include stronger social connections with peers, a greater identification with school and positive social behaviors (Durlak, Weissberg, & Pachan, 2010; Farb & Matjasko, 2012). One type of OST experience that is recognized for its impact on intrapersonal and interpersonal outcomes is outdoor adventure education (OAE). OAE uses remote outdoor environments, activities like backpacking and sea kayaking, and other curricular components (e.g. leadership development) to foster skill development and personal growth (Priest & Gass, 2005). Research on multiday OAE experiences has consistently found outcomes that align with noncognitive factors: improved self-confidence, self-efficacy, social belonging and perseverance (Hattie, Marsh, Neill, & Richards, 1997; Sibthorp, Furman, Paisley, & Gookin, 2008). However, most studies in OAE have looked at stand-alone programs and there is little research in the United States focused on how schools can leverage OAE experiences to support traditional classroom learning for adolescent students.

This study sought to gain insight into the overall effectiveness and value of multiple extended OAE experiences as an option for schools interested in promoting the development of noncognitive factors in adolescent students. It was of particular interest to understand how shared OAE experiences affect student beliefs and relationships in ways that influence behaviors and the social learning context back in school.

OST, OAE and potential contributions to classroom learning

OST activities are an important component to adolescent student development. Meta-analyses synthesizing research on sports, clubs, arts activities and other school-related OST programs have found positive effects on student attitudes, beliefs of competence, self-regulation and social outcomes (Durlak et al., 2010; Farb & Matjasko, 2012). Outcomes include positive attitudes toward school and learning, a stronger work ethic, increased school attendance, sense of belonging, and healthy relationships with peers and adults at school (Pittman, Irby, Yohalem, & Wilson-Ahlstrom, 2003; Putnam et al., 2012). These outcomes demonstrate increased engagement in learning, which is associated with long-term academic success (Pittman et al., 2003).

OAE is one type of OST experience that is especially effective in fostering these key noncognitive factors. Broadly, noncognitive factors can be described as the 'attributes, dispositions, social skills, attitudes, and intrapersonal resources, independent of intellectual ability ... that high-achieving individuals draw upon to accomplish success' (Shechtman et al., 2013, p. 1). Set within an outdoor educational context that uses adventure activities like backpacking and sea kayaking as a medium for teaching a range of technical, interpersonal and intrapersonal skills, OAE provides powerful opportunities for learning and development. Research and summative literature have found clear connections between OAE participation and increased self-efficacy, self-confidence, self-regulation and problem-solving skills as well as group-related outcomes like social cohesion, communication and team functioning (e.g. Collins, Paisley, Sibthorp, & Gookin, 2012; Ewert & McAvoy, 2000; Hattie et al., 1997; Propst & Koesler, 1998; Sibthorp, 2003; Sibthorp et al., 2015; Sibthorp & Jostad, 2014).

The inherent qualities of OAE experiences provide a unique context for supporting a number of outcomes of interest to schools. OAE programs take advantage of remoteness, a small community of learners and opportunities for hands-on learning to create an environment where students 'learn about their strengths and weaknesses, discover new passions, re-evaluate personal values, gain new skills, and make powerful connections with others' (Sibthorp & Richmond, 2016, p. 214). Research has noted how OAE's novel natural surroundings, physical and mental challenges, and opportunities to receive immediate feedback from peers, trained instructors and the environment support outcomes related to leadership, teamwork, self-confidence and self-efficacy for functioning effectively under difficult circumstances (Hattie, 2009; Sibthorp et al., 2008; Sibthorp, Furman, Paisley, Gookin, & Schumann, 2011).

Given what is known about the benefits of OAE, there is surprisingly little research on how schools can use outdoor adventure experiences to complement classroom learning. This is especially true within the United States where schools infrequently integrate OAE into curriculum (Ewert & Sibthorp, 2014). The bulk of OAE research looks at stand-alone programs offered by organizations like Outward Bound and the National Outdoor Leadership School (NOLS), where students come together from different places for the specific purpose of participating in a course (Hattie, 2009). Research on school groups using OAE has mostly looked at college orientation programs and their impact on social adjustment and student retention (e.g. Bell, Gass, Nafziger, & Starbuck, 2014). A recent review of OAE literature identified that there is a clear need for more research on how OAE experiences may benefit a group of students who return to a common application setting like school (Sibthorp & Jostad, 2014). It is more common to see schools incorporate OAE in the United Kingdom, New Zealand and Australia, where there is a culture of multiday 'residential' programs involving adolescents, and a few studies on these programs have explicitly sought to find clear connections between OAE experiences and school-related outcomes but findings are mixed (e.g. Christie, Higgins, & McLaughlin, 2014; Scrutton, 2015). Clearly, the potential of OAE—particularly multiday expeditions—as a complement to classroom learning has not yet been fully explored.

Recognizing that not all learning and development occurs in the classroom, educators and policy-makers are calling for more intentional connections between OST activities and in-school learning (Pellegrino & Hilton, 2012; Pittman et al., 2003). Schools have had a difficult time fully integrating OST activities, including OAE, into school curriculum since outcomes indirectly contribute to academic achievement (Pittman et al., 2003; Yohalem, Granger, & Pittman, 2009). However, this could change with continued research. Therefore, this study sought to address the following research questions:

RQ1: How can school-related OAE experiences contribute to the development of noncognitive factors in adolescent students?

RQ2: How can outcomes from school-related OAE experiences contribute to school success, both individually and collectively?

RQ3: What are the key mechanisms for the development and retention of noncognitive factors?

Study purposes and objectives

With these research questions in mind, the purpose of this study was to address the limited understanding of how OST activities like OAE can foster noncognitive factors within an intact group of adolescent students from the same school. It examines both the near-term and lasting effects of OAE participation and explores how these experiences affect student beliefs, student relationships and school culture.

Methods

This study employed a grounded theory approach to understand and explain how a shared OAE experience affects a group of students from the same school. Data collection involved semistructured interviews with students and faculty. This approach allowed for a deep exploration of how one particular school uses multiple OAE experiences to supplement and support classroom learning.

Setting and participants

Participants for this study included adolescent female students and adult faculty from an independent all-girls school located in Los Angeles. Students and faculty participated in a custom multinight OAE experience designed and run by the NOLS within the previous year. The school worked with NOLS to create a series of custom courses for students. The resulting program sends nearly all students on six-day and five-night expeditions in 7th, 9th and 11th grades to build community, practice leadership and get students out of their comfort zones.¹ By the end of their time at the school, students participate in three expeditions that take place in Utah (7th grade), Arizona (9th) and Washington (11th). Each grade cohort has between 50 and 90 students and students travel in small groups of 8–12 students, 2–3 NOLS instructors and a faculty member from the school. Annual enrollment for the entire school is approximately 480 students with 39% of students representing minority populations and 24% of students receiving full or partial financial aid.

Sample

The author and the school's OAE coordinator recruited a purposive sample that was representative of the student body and captured a wide range of experiences and opinions. Following the recommendations of Creswell (2008) and Chamaz (2014), a target of 10 interviews was established for each student cohort that recently completed their 7th, 9th or 11th grade backpacking trips. In addition, the study sought to interview 10 faculty members who accompanied students on these experiences. The final sample included nine 8th-grade students, eleven 10th-grade students, seven 11th-grade students and four 12th-grade students. Students ranged in age from 13 to 18 years. The faculty participants included two male teachers, four female teachers and two female administrators. All students who were interviewed participated in a backpacking expedition within the previous 12 months. The composition of the student interviewees representing minority populations and 25% receiving financial assistance.

Procedures

Grounded theory methods offer 'systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct a theory "grounded" in their data' (Chamaz, 2014, p. 1). Data collection involved semi-structured interviews with open-ended questions designed to gain a deeper understanding of experiences and related outcomes. This qualitative approach is useful when investigating meaning and relationships among variables as it allows researchers to identify themes from the responses provided by participants (Marshall & Rossman, 2006; Miles, Huberman, & Saldana, 2014). Interviews lasted between 20 and 45 min each. Questions were crafted to gain an insight into the experience itself, highlights and challenges, salient lessons, and impacts on peer and student–faculty relationships. Representative questions for students included as follows: 'What were some highlights from your trip?', 'What strategies did you use to overcome challenges?' and 'How have your school-related OAE experiences affected your life at school and in your personal life?'. Faculty were asked about how the experiences influenced school culture, classroom and learning

behaviors, and relationships among and between students and faculty. Interviews sought to capture a broad range of responses, with the goal of saturation sampling where additional interviews yield little or no new information (Creswell, 2008; Miles et al., 2014).

Interviews took place over a 10-day period during the fall semester of 2014. All student interviews conducted in person on the school campus in Los Angeles. Some faculty interviews were conducted by phone three days prior to the campus visit due to scheduling availability. All interviewees completed necessary consent and assent forms and interviews were recorded to ensure accuracy.

Data analysis and interpretation

Upon completion of the interviews, approximately 25 hours of audio were transcribed. Transcriptions were then examined through three stages of analysis that included open, focused and axial coding (Miles et al., 2014; Saldana, 2013) with the aid of HyperResearch software (ResearchWare, 2013). This process examines the transcript data, recognizes and groups salient themes, and identifies connections among themes.

Findings

Participants discussed their experiences on one or more school-related OAE expeditions, sharing perspectives on the program's purposes, outcomes and overall effectiveness. Faculty talked about their personal experiences as well as their observations of how the trips impact student development and relationships with peers and faculty. Student interviewees shared highlights and challenges related to one or more OAE experiences and explained how the experiences affected friendships and their personal view of themselves. Students also discussed how the backpacking experiences served as a chance to practice leadership as opposed to mostly talking about leadership within the classroom environment. Finally, all of the interviewees talked about how relationships, lessons and the overall shared experience contributed to school culture and classroom learning. Analysis of these interviews led to the development of a theory of change describing how shared school-related OAE experiences can support student learning. This model is presented in Figure 1.



Figure 1. Using school-related OAE experiences to support student learning.

Integrating OAE into school curriculum to support student development

Figure 1 pulls together major themes from the interviews to summarize how particular learning mechanisms help bring about outcomes from the OAE experience in three areas: social connectedness, self-efficacy in leadership competencies and a recalibrated sense of self. These outcomes are interrelated as reflected in their positioning in the diagram. There is a reciprocal relationship among the three major outcomes as the following discussion will show. In addition, the relative size of each outcome indicates magnitude with social connectedness being the most reported outcome. The left side of the model recognizes that these outcomes are also influenced by pre-experience factors that include the student experience and skills, student attitudes and beliefs about themselves, individual sense of self, student expectations for the experience and existing student relationships. The right side of the model highlights the impact these OAE experiences have on the school and the important role the school plays in supporting and furthering outcomes from one or multiple OAE experiences. Direct benefits to the school include transformed relationships that foster a positive learning environment and the shared narratives of challenge, peak experiences and accomplishment that contribute to a common school identity. Figure 1 represents the interrelatedness of these benefits. Similarly, the school helps ensure that positive outcomes are not lost post-experience. Students have opportunities to practice leadership skills within a school context and faculty can reinforce lessons by integrating concepts and teachable moments from the OAE experience into classes. Gains from the OAE experience are supported through a growth-oriented school environment that embraces challenge, community and the development of leadership competencies.

The following sections describe elements and interconnections of the theory of change in greater detail. These sections will focus on the outcomes of the OAE experience and the importance of and impact on the shared school environment with mechanisms of learning and preexperience factors discussed within the context of each section.

Social connectedness

Of the three major outcomes of the school OAE experience, social connectedness was the dominant theme among all grade cohorts. Interviewees remarked on how the shared OAE experiences facilitated social bonding among students and improved rapport between students and faculty. This included students who look forward to the trip as well as those who would rather not leave the comforts of home. The OAE experience allowed students to see their peers in a new light and the challenges of the expedition often brought members of the group closer.

An 8th grader who went on her first school OAE experience the previous spring explained that 'bonding and relationships' were the most meaningful products of the trip. 'It just made my trip', she said. 'And just coming back here with all these close friends with whom I have a much closer relationship ... It's really meaningful to me.'

Students were able to live, travel and connect with a smaller subset of their peers. The shared experience allowed existing friendships to grow stronger and offered opportunities for students to connect with peers they did not know well before the trip.

Shared challenge and social connectedness

The challenge that came along with the experience served as an important mechanism for bringing the students closer. For many of the girls, getting through a long hiking day or overcoming homesickness was made possible by the social support of their peers. One junior said that during a hard hike, she had to remind herself that 'the only way we're going to get through this or enjoy it all is if we do it together as a group'. Several students from each grade cohort noted how singing songs, sharing inside jokes and simply venting frustrations helped get them through difficult hikes and homesickness. The group served as both a means of support and an opportunity for connection.

Shared	'I had to keep reminding myself, 'I'm feeling really crappy right now but my whole group is too and we're
challenge	all going through the same experience together The only way we're going to get through this or
	enjoy it at all is if we do it together as a group.' (11th grader)
Being away	'For me, the technology part really affected me a lot because I realized how much closer you can get with
	someone when you are not worrying about all the social media stuff—being apart from that and being
	present. Being present really helped me.' (8th grader)
	even when I am with a friend, they may be having five conversations with other friends. Like texting
	It takes away from that personal connection. Being away from those distractions brings you a lot
	closer to the person.' (11th grader)

Table 1. Mechanisms supporting social connectedness.

Being away and social connectedness

Interviewees reflected on the importance of 'being away' from home and school, distanced from the distractions of technology, daily stress and normal social roles. An 8th-grade student talked about how the trip allowed her to let down her guard and be herself:

At school, I like to say to my friends you put on a mask. Some days you put on a mask because you are worried about what some people think about you and some days you don't because you don't care ... but on [these backpacking trips] everyone is the same: you haven't showered, you haven't cleaned, you're not using a toilet ... you're not sleeping on a bed. You don't have to put on a mask because everyone else is the same.

Being away from the normal routine and distractions allowed for a reconsideration of norms and expectations, allowing students to interact in a more authentic manner.

Many students noted that taking a break from technology served as a mechanism for greater interpersonal connections. They explained that they often feel tied to phones, tablets and social media in ways that sometimes feel overwhelming. Pressing pause on ever-present distractions created the space to connect authentically with others. See Table 1 for representative quotes.

Self-efficacy in leadership

The personal connections students made with their peers related to lessons in leadership. Creating a level of trust within the group encouraged students to take personal risks, work with others, make consequential decisions and manage adversity—building self-efficacy in leadership. The experiential nature of the program provided students with a deeper understanding of the different facets of leadership and a new set of communication and conflict resolution skills, affecting student evaluations of their own leadership competence. Lessons in leadership were something many of the girls took away from these OAE experiences, particularly students coming off their 9th-grade and 11th-grade trips.

Building self-efficacy in leadership through new and different roles

Students reported that their OAE experiences allowed them to explore different leadership roles, whether that be taking on a designated leadership role or stepping back and supporting others. Several students and faculty talked about how the experience encouraged students work collaboratively and push personal boundaries. Several 10th- and 11th-grade students noted that a key lesson was learning how to support others in leadership roles, coming away with an understanding that so-called leadership does not necessarily require being the one in charge—you can show leadership by being actively engaged and holding yourself and others accountable (see Table 2).

Student-directed decision-making as a mechanism for learning

The progression of OAE experiences has students take on more decision-making responsibility as the students get older. Faculty explained that the 7th-grade trip offers opportunities to practice taking on a leadership role with close guidance from instructors. By 11th grade, students are making many important decisions on their own, with instructors acting more as coaches and 8 😉 D. RICHMOND ET AL.

New and different roles	'We had a couple people that weren't really leaders, vocal leaders, but when it was their turn for leader of the day, they really had to step up and burst their comfort zone. And I think a lot of people should take advantage of that because that helps a lot. It boosts your confidence and you reassure yourself that you can be a leader.' (10th grader)
Student-directed decision-making	'We had to make a lot of our own decisions We had to make decisions that would affect other people and we had to think of what's best for others as well as ourselves. Taking care of yourselves, staying hydrated, making sure you eat enough and that you communicate what you need.' (11th grader)
Reflection	'It was definitely good for me to take a step back and thinking about how other people might see what I'm doing objectively. Looking at [my leadership] and saying, 'I do like being in control so how am I making sure I am not being controlling?'. (10th grader)
Coaching and mentorship	'I think the instructors definitely helped us. A lot of the time they would help us think to not [dwell] on the problems but think about the ways it can get better, the ways you can help yourself or others.' (10th grader)

 Table 2. Mechanisms for building self-efficacy in leadership.

mentors. Thinking about the potential outcomes of decisions and their impact on others was a lesson that several 10th and 11th graders discussed in their interviews. Within the context of the experience, many decisions have real consequences—from making it to camp in a timely manner to influencing group morale. With success and the occasional set back, students reevaluated their self-efficacy in leading others and working within a team. A faculty member observed that students really had to learn

... how to get up there and be a leader. How do you debrief something? How do you facilitate and delegate responsibility? What does an actual leader look like? They learn that there's a lot of things you have to do organizationally. It's not just being the loudest person ... there are a lot of moving parts.

Students observed that good decision-making was dependent on clear communication and feedback. Faculty noted that their students, especially those in 7th and 9th grades, often have a hard time giving good constructive feedback 'because they don't want to hurt each other's feelings'. In the backcountry, it is difficult to push difficult discussions aside as students live and travel together for an extended period of time.

Students noted that they sometimes needed to 'have straight up conversations ... to help us get through the week' or had to confront and resolve interpersonal conflict to meet group objectives. A 12th grader thought that it was 'a good experience to know how to deal with those situations and not let your frustrations get a hold of you ... how to [and] being able to move on'. Back at school, students may put off resolution by simply going to the next class or going home. The remote setting of the OAE experience and the immediate needs of the group often require conflict be dealt with swiftly and directly.

Reflection as a mechanism for building self-efficacy in leadership

The intense nature of the course and emphasis on self-improvement encouraged students to reflect on their strengths and weaknesses as leaders. An 11th-grade student credited this self-awareness to lessons on leadership styles and the feedback she received from peers. This time away from the classroom allowed students to strategize and plan for how to implement changes upon returning to school. Many students talked about the need to be more vocal and involved in decision-making and the need to be more patient with others. Others came away with a new appreciation for their own capacity to step up and lead or maintain a positive attitude through a tough hiking day or a bout of homesickness.

Using coaching and mentorship to build self-efficacy in leadership

Students and school faculty made efforts to acknowledge the contributions of NOLS instructors to building self-efficacy in leadership. Students talked about how instructors served as mentors and facilitators more than authority figures. Instructors helped students assess their leadership skills,

provided encouragement and emotional support, and coached students on outdoor skills and group communication. Several faculty used the OAE to observe the teaching styles used by NOLS instructors, and felt that the instructors balanced instruction with opportunities for student autonomy and experiential learning.

Recalibrated sense of self

Reflection on personal accomplishment and time away from normal routines allowed students to reevaluate their sense of self, particularly beliefs of competence, potential and personal values. OAE experiences provided physical, intrapersonal and interpersonal challenges. These challenges resulted in a sense of accomplishment, self-confidence and self-efficacy in problem-solving and performing under difficult circumstances. Even students who dreaded camping reported that they changed the way they viewed themselves and their place in the social milieu of school.

Being comfortable being uncomfortable

Many students reflected on how the OAE experiences made them understand the value of adaptability. The trip pulls students out of their familiar home and school environments and places them in remote wilderness locations with unique and challenging situations. Girls from each interview cohort expressed that they were often uncomfortable on the OAE trips, largely due to the unfamiliar surroundings, being away from the comforts of city life and being placed in novel situations. For some, this state of physical and psychological discomfort was a source of anxiety going into the trip. However, many noted that through social support and learning from instructors how to stay warm and eat well, they learned to be 'comfortable being uncomfortable', gaining self-efficacy for dealing with challenge. Several students noted this lesson could be carried over to other situations, from difficult projects to the transition to college. The OAE experience reminded them they could handle more than they expected (see Table 3).

The value of a positive mind-set

A key strategy for dealing with uncomfortable and challenging situations was keeping a positive mind-set. Students explained that they were able to persevere through challenging hikes and thoughts of home by managing their perspective. Students practiced staying calm in times of anxiety and stress. As noted earlier, this ability to persevere was bolstered by positive peer support.

Comfortable being uncomfortable	'It shows why we do this. You're going to be in an uncomfortable situation one day and you're going to have to be able to figure it out. Being able to figure it out is what's going to make us successful' (11th grader)
Positive mind-sets	'So just being able to take the good out of every situation and understand the bad and also it resolves. There are things you worry about so much but in the end it wasn't really worth the worry because it worked out okay. You will somehow figure it out. Spending so much time worrying about something that's trivial is not as important as experiencing it for what it is' (12th grader)
Empowerment, accomplishment and independence	'I've just been really organized [since the trip]. I've just kind of realized that no one else is going to do what I need to do for me. So just being a self-starter and doing my homework and not having anybody need to tell me to do it. I think that was a real valuable lesson that doesn't just apply to NOLS but also to everyday life.' (10th grader)
Novel environment	'It really opens your eyes to like the fact that the world we live in now, in Los Angeles, is not the only world that exists.' (12th grader)
Reflection	'It helped me see what was important in my life I kind of really thought about who were my friends and my family. What I wanted to do and where I wanted to spend my time It was easy for me to think about what really mattered. And then I came back and kind of implemented that in my life' (10th grader)

Table 3. Recalibrated sense of self (quotes).

Recalibrating sense of self through independence and accomplishment

Overcoming personal fears, learning to live comfortably in the backcountry, traveling miles with a heavy pack and taking on leadership responsibility led to a sense of empowerment. An 8th-grade student talked about how the trip made her feel more independent. She said, 'I feel like now I don't need my parents to do everything for me and I do more things on my own'. This sense of independence came about by being empowered to make decisions, cooking meals and understanding the importance of being self-motivated while in the field. Accomplishing group goals depended on the girls being able to lead each other and take care of daily tasks with minimal adult directives. Students described how the experiential component of the trip, actually going out and trying new things and taking on personal accountability led to improved self-confidence in being able to do more for themselves.

The challenges inherent in the OAE experience provided an important mechanism for generating a strong sense of self-confidence and accomplishment. While the challenges varied by grade level to meet the physical and emotional capabilities of each group, students across all grades talked about peak challenge experiences and their impact on their confidence. Several 11th-grade students talked about a day hike on their most recent trip that included a nontechnical peak ascent with one student remarking 'I can't believe I just did that!'. This produced both a sense of pride and a general feeling of accomplishment. Students mentioned that overcoming doubt and physical exhaustion changed their view of what they thought they could achieve.

The novel environment and personal possibilities

Understanding they could manage challenge reinforced student beliefs regarding the value of trying new things. Part of an individual's identity is connected to how they view the world and a conception of the potential opportunities that lie ahead in their lives. Although nearly all of the school's students are college bound, the OAE experiences helped the girls expand their range of activities and experiences that define them.

Reflection on values and beliefs

Finally, the time away from school encouraged some students to reflect on their lives back home. Several 10th and 11th graders talked about being overscheduled and stressed at home. The OAE experiences, while school-related, were a welcome break from the routine. It gave them a chance to step away from the day-to-day and reexamine their lives from a new perspective. Students valued getting away from 'the grind' and being able to think about how they could apply what they learned. Several talked about a new appreciation for nature as well. Overall, OAE experience afforded the time, and setting for a reset—a chance to 'think about what really mattered' in their lives.

Importance of the shared school environment

The school plays an important role in ensuring gains made on these OAE experiences are not lost. As the right side of Figure 1 summarizes, returning to the same school allowed students in this study to carry new and transformed relationships and shared narratives back to campus. The growth-oriented culture of the school supported the continuation of learning through lesson integration and reinforcement and opportunities for practice. Unlike most OAE courses where participants come together for the specific purpose of participating in the course and then disperse upon completion, students are able to experience continuity from one learning space to another.

New and transformed relationships continue at school

The primary benefits of school-related OAE experiences are social in nature—friendships are allowed to endure and develop beyond the end of the OAE course. Students return to school with an expanded network of peers. Interviewees realized that the experience helped them to

'branch out' and connect to new people. A 10th-grade student said, 'I think it's a really important part of [our school's] community—being able to say hi to anyone in the hallway'. A 12th-grade student suggested that the trip 'unites the grade' helping foster a sense of belonging. Additionally, these shared OAE experiences build lasting relationships between students and faculty, as one chaperone observed,

Interpersonally, I have felt that I have really gotten to know the girls and the girls have really gotten to know each other in a totally different environment that's not at all academically focused. One that really focuses on who they are and how they behave and how they express reactions about each other ... the relationship building aspect of it is really important.

Shared narratives build common identity

A secondary benefit to the school is that these OAE experiences foster a connected academic community through shared stories of challenge and peak experiences. An 8th-grade student said that 'since everybody goes through the same thing, everybody does it, it kind of expands our conversation ... this is something we've all been through'. A 12th grader near graduation echoed this sentiment saying, 'I think it really brings the students and the teachers that come with us, it brings us all together'.

The shared narratives from OAE experiences allow the school to leverage the experiences into something more than time away from school. To be sure, stand-alone OAE programs produce similar outcomes to the school program from this study—strong social connections, lessons in leadership and opportunities for reevaluating identity, capabilities, and potential. But in those stand-alone programs, the supportive social structure and sense of shared experience dissipates at the end of a course. At school, highlights and challenges are told and retold, reformed and reinterpreted over time, reinforcing social connections and reminding students, as one 12th grader pointed out that they do have the capability and 'confidence ... to [get] through something that was really difficult'.

How a shared school environment supports OAE outcomes

The shared school environment helps ensure that gains from the trip are not lost. Leadership lessons from OAE experience can be revisited and reinforced back at school. Students from each cohort talked about how they were able to take lessons from their trips and apply them to school. Students talked about how the trip gave them decision-making and communication skills to navigate collaborative projects and conflict. Interviewees shared anecdotes about providing better feedback to peers and sports teammates or taking the initiative to bring up student issues with faculty. Some teachers talked about how they refer to these OAE experiences and leadership lessons when discussing problem-solving and adversity in class. The overall culture of the school —one that embraces personal growth, challenge and leadership—supports the practice and reinforcement of learning outcomes from the OAE experiences. The positive social environment created through OAE had clear and positive impact on academic motivation, mind-sets and behaviors. That said, both students and faculty conceded that even more could be done at school to reinforce lessons, from using the NOLS leadership language more consistently, to making more time to let students reconnect with their expedition mates.

The continuity between these unique OST experiences and school provides a strong example of how OAE can support student engagement. OAE provides a means to encourage student interaction and cooperation while giving students the opportunity to practice leadership and communication skills. The intense nature of OAE coupled with time for reflection allows students to reevaluate themselves and their relationships with others. Upon returning to a shared school environment, students have stronger connections with their peers and faculty members as well as a shared sense of accomplishment—supporting a positive and inclusive learning environment.

Understanding how OAE complements classroom learning

The integration of an intense and novel OAE experience within overall school curriculum allowed for the development and cultivation of critical outcomes that benefit classroom learning—especially those associated with sense of belonging, self-efficacy in leadership-related competencies and identity. Research has noted how these outcomes are related to factors tied to student motivation and engagement (see Farrington et al., 2012). Though ambitious and resource-intensive, this approach may serve as a model that supports the educational needs of adolescents while fostering a sense school community.

School-related OAE and the development of noncognitive factors

The first research question for this study sought to understand how school-related OAE experiences contribute to the development of noncognitive factors in adolescent students. For the independent all-girls school in this study, the three experiences in 7th, 9th and 11th grades resulted in stronger social connections, self-efficacy in leadership competencies, and an overall reappraisal of individual and group identities. The mechanisms of learning inherent to OAE supported the development of these particular outcomes. Living and travelling together in small social groups allowed students the opportunity to get closer through shared challenges and extended personal interactions away from school. The physical and mental challenges associated with an OAE experience resulted in students understanding that they could manage adversity and accomplish difficult tasks. The combination of these interpersonal and intrapersonal outcomes paired with time for reflection allowed students to reconsider their own identities as students often reinforcing beliefs that they are strong, capable and empowered—and their place within the social structure of school.

These outcomes align with those commonly reported in OAE research. Student-reported outcomes related to social connectedness, greater self-awareness, leadership and teamwork skills, and general self-efficacy and self-confidence have been found in numerous studies (cf. Goldenberg, McAvoy, & Klenosky, 2005; Hattie et al., 1997; Sibthorp et al., 2008). What is unique about the findings from this study is that students are able to return to a shared school environment where outcomes can directly support classroom learning. This study contributes to a gap in the literature on the use of OAE with intact groups of students from the same school (Sibthorp & Jostad, 2014).

The study's second research question sought to understand how shared OAE experiences could contribute to both student and school success. This study found a relationship between OAE participation and the cultivation of noncognitive factors like sense of belonging and self-efficacy beliefs—both of which contribute to personal sense of self and group identity.

The school-related OAE experiences allowed students to build new connections with peers, deepen existing friendships and interact with faculty in an informal environment. These relationships among students and faculty help foster student sense of belonging and an inclusive culture. Shared experiences with peers and faculty experiences allow for the creation of narratives that support a collective identity and a sense of belonging. These transformed relationships expand students' social networks and encourage more collaboration outside of core social groups.

A strong sense of belonging and a supportive academic community have long been associated with student engagement (Goodenow & Grady, 1993; Osterman, 2000; Walton & Cohen, 2011). A weak sense of belonging can lead to feelings of isolation and lack of academic motivation (Eccles & Wigfield, 2002). Conversely, learning environments where learners have strong affiliations with others (Yeager & Walton, 2011) or even positive weak ties with peers (Sandstrom & Dunn, 2014) can result in an overall sense of well-being, reduced stress, and increased motivation and task perseverance. At the school in this study, students and faculty shared a belief that the OAE experiences improved relationships. These strengthened relationships facilitated communication

between students and faculty and create an environment where students feel supported and welcomed by a community of peers, positively influencing student motivation to engage with school and persevere academic and interpersonal challenges. This aligns with current motivational theory that underscores the importance of relatedness (cf. Ryan & Deci, 2000)

Strengthened relationships and a sense of belonging contribute to self-efficacy in leadership and these beliefs can carry over to the school environment. Students from this independent all-girls school gained self-efficacy for taking on various leadership roles, self-efficacy for using communication and conflict resolution skills, and general self-efficacy for dealing with challenge and adversity. At school this translates into students taking on new leadership roles and using various communication skills in class and school activities. Students also come away with a shared mind-set that students are 'strong women', both mentally and physically.

Social cognitive theory posits that student achievement is based on an interaction between behaviors, beliefs and environmental conditions (Bandura, 1986, 2001). These OAE experiences provide opportunities for students to build competencies within a supportive environment that provides real-time feedback. The resulting set of beliefs can support learning back in the school environment. 'Compared with students who doubt their learning capabilities, those who feel efficacious for learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level' (Schunk & Pajares, 2001, p. 16).

Both a sense of belonging and increased self-efficacy in leadership contribute to the development of positive individual and collective identity among students. Like other OST and afterschool activities, OAE experiences are a place to try new things and explore individual identity in a nonacademic setting (Feldman & Matjasko, 2005). In this study, students formed or revised views of themselves as leaders, learners and members of the school community. The shared nature of the experience and the accompanying narratives then contribute to a shared identity among students—an identity that takes pride in leadership, challenge and stepping out of personal comfort zones.

The third research question asked how noncognitive factors could be developed and retained when bridging OST and school. Schools might wish to intentionally incorporate specific components of this program that are also inherent to OAE: (a) personal and shared challenges, (b) opportunities to unplug from day-to-day life, (c) a sense of novelty, (d) opportunities for social connections, (e) opportunities to practice essential noncognitive skills such as self-discipline, (f) mentoring via both staff and other participants and (g) an enjoyable and challenging environment. These elements are common in outdoor and adventure program models (cf. McKenzie, 2003; Walsh & Golins, 1976). However, when OAE experiences are integrated into overall school curriculum, schools can increase program impact as a shared school environment provides additional consistency and reinforcement. Schools also possess awareness of predictable transitions in adolescents' educational trajectories that many stand-alone OAE programs lack. In addition, the social connections formed during OAE experience can continue. In many OAE programs, the social group dissipates at program conclusion. This dissolution of the social group and lack of continuity inevitably erodes some of the value as the social structures and application contexts change. A school that incorporates OAE into its overall curriculum has the opportunity to build on developmental and social gains back at school.

Future research directions

Moving forward, research should continue to look at how schools can use OAE to complement classroom learning. Future studies could use quantitative methods to examine the relationships between OAE participation and particular noncognitive factors. While there is an increased interest in the value of OST like OAE activities, additional research will help educators, administrators, policy-makers and parents make the connection between participation and the noncognitive

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factors that indirectly lead to student success (Putnam et al., 2012). Additional research could also focus specifically on the development of noncognitive factors and adolescent girls. Though this was not the original focus of the study, findings support the development of self-efficacy and social belonging. Research has noted that adolescent girls place a greater emphasis on social belonging (Perry & Pauletti, 2011) than boys and that females tend to have lower self-efficacy in areas like leadership (Galambos, 2004; Ridgeway, 2001). OAE appears to be well positioned to address issues of social connection and self-beliefs.

Limitations

This study is not without its limitations. First, the independent all-girls school in this study is a unique educational environment with exceptional resources. It is hard to generalize findings to other settings due to the uncommon curriculum and the unique culture of the school. Second, like most studies, the research was vulnerable to the biases, personal experiences and educational background of the primary investigator (PI) (Chamaz, 2014). To reduce bias, the PI consulted with a female professor versed in qualitative research and other graduate students, both male and female, to evaluate codes, themes and general findings. Finally, there may have been bias in participant selection even though it included a broad range of backgrounds and opinions. It is possible that many of the students and faculty that agreed to take part in the study had positive dispositions toward the school's OAE experiences, though more than a dozen of the interviewees expressed that they did not necessarily look forward to the experiences. The reader may wish to keep these caveats in mind when interpreting findings.

Conclusion

Despite the distinctive nature of the school in this study and their OAE experiences, this study underscored how educators can take advantage of experiential learning opportunities outside of the classroom to build social connectedness, foster positive self-efficacy beliefs and provide opportunities for students to explore their personal sense of self. While this study and other research points to the promise of using OAE to complement classroom learning, few schools fully incorporate OAE experiences into curriculum. Intentionally designed OAE programs offer an intriguing option for schools interested in cultivating noncognitive factors that carry over to the classroom and support student success.

Note

1. In the United States, 7th-grade students are generally 12–13 years old, 9th-grade students are 14–15 years old, 11th-grade students are 16–17 years old and 12th-grade students are 17–18 years old.

Disclosure statement

No potential conflict of interest was reported by the authors.

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