

## **Bridging the Opportunity Gap: College Access Programs and Outdoor Adventure Education**

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### **Abstract**

Students with low socioeconomic status (SES) are much less likely to participate in out-of-school-time (OST) activities than their more affluent peers. This “opportunity gap” may have compounding effects, as these activities help develop key noncognitive factors: the skills, beliefs, and behaviors associated with college readiness. College access programs may provide opportunities that are out of reach to students with low SES, including outdoor adventure education (OAE) experiences. This study involved 175 adolescents from a needs-based college access program and examined the relation of participation in a weeklong OAE experience to changes in student attitudes and beliefs, specifically (a) self-efficacy for dealing with challenge and engaging in help-seeking behaviors, (b) growth mindsets toward leadership and emotional regulation, and (c) sense of belonging within a community of learners. The study employed pre- and post-course measures of noncognitive factors along with in-depth interviews to identify outcomes and converging results from quantitative and qualitative data. Results indicate that OAE participation relates to gains in self-efficacy for dealing with challenge and using help-seeking behavior and reinforces sense of belonging. Interviews identified that the OAE experience provides an emotionally intense and authentic practice setting where students feel impelled to overcome difficulties. Unfamiliarity with the backcountry setting necessitated that students reach out to others for assistance, remain flexible, and adapt to new environments—key skills associated with college success.

**KEYWORDS:** outdoor adventure education; noncognitive skills; college readiness; socioeconomic status; mixed methods

There is a widening “opportunity gap” among youth in the United States. Students from low socioeconomic backgrounds are 27% to 50% less likely than students with high socioeconomic status (SES) to participate in out-of-school-time (OST) enrichment activities such as sports, clubs, or volunteer service (Snellman, Silva, Frederick, & Putnam, 2014). This is largely due to wide disparities in family income and access to programming. The highest earning families spend nearly 7 times or more on OST opportunities than do families with low incomes (Duncan & Murnane, 2011). Additionally, low income families face numerous barriers to participation other than cost, including transportation and availability of programming (Vandell, Larson, Mahoney, & Watts, 2015). These disparities may have compounding effects, as it is often through OST activities that students develop competencies important for college and beyond, from perseverance and self-confidence to social skills and leadership (Durlak, Weissberg, & Pachan, 2010; Feldman & Matjasko, 2005; Fredricks & Eccles, 2010). Indeed, studies have found relationships between SES, participation in extracurricular activities, and gains in academic achievement as well as intrapersonal and interpersonal development (e.g., Covay & Carbonaro, 2010; Wright, 2015). These studies provide evidence that when children from families with fewer resources miss out on important OST opportunities, they also miss out on developmental gains that can contribute to success in the classroom and beyond.

Many of the outcomes associated with enrichment opportunities are often referred to as *noncognitive factors*<sup>1</sup>—skills, beliefs, and behaviors that cannot be measured directly through traditional academic assessments, including standardized testing (Dweck, Walton, & Cohen, 2011; Heckman & Rubinstein, 2001). A growing body of evidence shows that noncognitive factors contribute to performance in the classroom and may be as important as intelligence for academic achievement, college attendance and completion, and long-term personal success (Duckworth, Peterson, Matthews, & Kelly, 2007; Dweck et al., 2011). These noncognitive factors are linked to student motivation and the ability to manage adversity and challenge. Ideally, every student has access to a variety of high-quality experiences that contribute to positive developmental trajectories. Unfortunately, the growing opportunity gap demonstrates that many youth are simply missing out.

College access programs are one approach that can address the opportunity gap. Throughout childhood and adolescence, many students with low SES encounter numerous barriers that make it difficult to break the cycle of poverty, including a lack of both financial resources and necessary skills for college (Nagaoka et al., 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013). College access programs work with students from low-income families, sometimes over several years, to support academic and personal development in an effort to improve college readiness (Glennie, Dalton, & Knapp, 2014; Venezia & Jaeger, 2013). Many programs provide ongoing support with schoolwork, arrange college visits, help with the college application process, and aid the transition to college. In addition, programs may offer programming and OST experiences that otherwise may be out of reach (Ng, Wolf-Wendel, & Lombardi, 2014).

Select college access programs include outdoor adventure education (OAE) experiences. While evidence suggests that participation in OAE relates to the development of many noncognitive factors, including self-systems (e.g., self-efficacy, self-confidence), changes in beliefs toward personal potential, leadership skills, and feelings of social belonging (e.g., Hattie, Marsh, Neill, & Richards, 1997; Sibthorp, Furman, Paisley, & Gookin, 2008), there has been little research on the role of OAE within a larger college access program.

Therefore, the purpose of this study was to understand the role of OAE experiences in the development of noncognitive factors among adolescents in a college access program. As educators and policy makers consider ways to address the opportunity gap and support college

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<sup>1</sup>Scholars have tried to use other terms such as *character* or *social-emotional skills*, yet the term *noncognitive factors* has gained traction in educational policy circles (Farrington et al., 2012; Shechtman et al., 2013). Therefore, it will be used in this article.

attainment for more students, OAE may be one way they can cultivate mindsets, beliefs, and behaviors that encourage perseverance in the face of challenges. This study examined the relation of an OAE experience to changes in self-efficacy for dealing with challenge, self-efficacy for engaging in help-seeking behavior, growth mindsets toward leadership, growth mindsets toward emotional regulation, and sense of belonging. The overarching goal was to understand how OAE, with its inherent challenges, novelty, and interdependent social structure, can augment college preparatory programs.

## The Opportunity Gap and Out-of-School-Time Experiences

Conversations about income disparities are common in Western education. However, it is becoming clearer that income inequalities have compounding effects, potentially limiting social mobility among those with low SES (Duncan & Murnane, 2011; Putnam, 2015). Longitudinal research has revealed that students with low SES are less likely to participate in extracurricular enrichment opportunities than students from middle-class backgrounds (Duncan & Murnane, 2011). Analyses (Putnam, 2015; Snellman et al., 2014) have found that participation rates in sports, extracurricular activities, and volunteerism have decreased among students with low SES, while participation rates among students with middle to high SES have increased. As a result, even though emerging evidence suggests that students from low-income homes may realize greater benefits from OST activities than their more affluent peers do (see Blomfield & Barber, 2011; Marsh & Kleitman, 2002; Randall & Bohnert, 2012), they remain less likely to participate.

Experiences born from extracurricular activities ranging from school band, debate, and after-school sports to outdoor adventures contribute to student development in ways distinct from those in school settings, often providing experiential learning that can lead to improved self-perceptions, connections to others, and positive behaviors that lead to increased motivation and ultimately academic achievement (Dawes & Larson, 2011; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Fredricks & Eccles, 2006; Larson, 2011; Vandell et al., 2005). These intrapersonal and interpersonal factors also support successful transitions to the college environment (Nagaoka et al., 2013).

## Noncognitive Factors and Out-of-School-Time Experiences

Many of the outcomes related to OST experiences fall under the umbrella term of *noncognitive factors*. The term encompasses a range of factors that contribute to success, from observable behaviors such as study skills and turning in homework to more internal conditions related to feelings of belongingness, beliefs related to competence (e.g., self-efficacy), self-regulation, and attitudes toward learning (Dweck et al., 2011). Noncognitive factors have received considerable attention in discussions of education and education policy (Pellegrino & Hilton, 2012; Tough, 2012). The excitement stems from the understanding that noncognitive factors are considered malleable well into adulthood and are often more predictive of long-term success than are measures of intelligence (Blackwell, Trzesniewski, & Dweck, 2007; Duckworth & Gross, 2014).

OST experiences are a part of many college access programs, as researchers and program managers recognize the value of student development in less formal, nonacademic settings (Glennie et al., 2014; Washington, Pretlow, & Barnett, 2016). College access programs remain especially interested in helping students build the skills to effectively take on leadership roles, overcome challenges, establish a community of precollege peers, and adopt a healthy growth-oriented mindset (Glennie et al., 2014; Rios-Aguilar & Deil-Amen, 2012; Washington et al., 2016). Some programs opt to use OAE to support these outcomes (Paisley et al., 2014; Richmond, Sibthorp, Jostad, & Gookin, 2016).

OAE uses activities such as backpacking and sea kayaking—often in a natural or wilderness setting—to teach technical skills, promote interpersonal competencies, and encourage

intrapersonal growth (Ewert & Sibthorp, 2014). Research in OAE has shown that participation promotes the development of self-confidence, self-efficacy, tolerance for adversity and challenge, self-regulation, leadership skills, and identity formation (e.g., Hattie et al., 1997; Sibthorp et al., 2008; Widmer & Taniguchi, 2014).

These experiential learning opportunities can act as a mechanism for establishing powerful social connections, especially among intact groups where participants know each other outside the outdoor experience. OAE has been linked to greater communication and teamwork among corporate work teams (Gass & Priest, 2006) and improved social connectedness among college students in wilderness orientation programs (Bell, Gass, Nafziger, & Starbuck, 2014). The close interaction among participants often leads to lasting friendships and an overall sense of belonging within the group.

The inherent qualities of OAE programs—challenge, real or perceived risk, peak experiences, collaboration and social interaction, skill acquisition and application, direct feedback from instructors, peers, and the environment—provide potential for affecting a number of noncognitive factors discussed in this article. Hattie (2009) found that OAE was especially effective at fostering student development because “learning about facing challenge, seeking feedback, adapting to peer cooperative learning, and enhanced self-regulation about one’s skills and strengths seems to last beyond the experience in the outdoors” (p. 157).

### Noncognitive Factors of Interest

OAE is particularly well positioned to influence a subset of noncognitive factors that are important for college success. For the purposes of this paper, noncognitive factors of interest are self-efficacy beliefs for dealing with challenge and self-efficacy for engaging in help-seeking behavior, growth mindsets toward leadership and emotional regulation, and sense of belonging within an academic community.

**Self-efficacy.** Self-efficacy refers to an individual’s belief in his or her ability to accomplish a given task or goal (Bandura, 1977, 1997), and OAE participation is closely associated with the development of domain-specific and generalizable self-efficacy beliefs (Hattie, 2009). Specifically, OAE research has found connections between program participation and the development of self-efficacy in dealing with challenge and self-efficacy for working with others (Sibthorp et al., 2008). In other contexts, including college readiness, self-efficacy for dealing with challenge is important, as it a prerequisite that students need to implement key adjustment strategies when facing obstacles and setbacks on their educational pathways (Farrington et al., 2012). The team-based approach of OAE also fosters a sense of interdependence within the small community of learners, with situations where asking for help is encouraged (Sibthorp & Jostad, 2014). Such help-seeking behavior is especially important at the college level, where success often requires students to reach out to peers, professors, and others for help to overcome academic and personal challenges (Nagaoka, Farrington, Ehrlich, & Heath, 2015; Walton & Cohen, 2007).

**Growth mindsets.** Self-efficacy is closely related to another set of noncognitive factors known broadly as mindsets and more specifically as implicit theories. Mindsets and implicit theories refer to a person’s beliefs about the malleability of particular traits and abilities (Burnette, O’Boyle, VanEpps, Pollack, & Finkel, 2013; Dweck & Leggett, 1988; Dweck et al., 2011). Dweck and Leggett (1988) explained that those with an *incremental* theory (i.e., growth mindset) believe that skill and ability within a domain can grow with practice and effort, while those holding an *entity* theory (i.e., fixed mindset) believe that skill and ability are relatively unchangeable. Dweck et al. (2011) found that “a growth mindset about intelligence fosters tenacity—by inspiring students to act on their self-efficacy and allowing self-efficacy to survive in the face of setbacks—where a fixed mindset undermines it” (p. 9).

OAE experiences offer numerous opportunities that influence mindsets toward two important skills associated with college success: leadership and emotion regulation (Nagaoka et al., 2015; Pellegrino & Hilton, 2012). Conley (2007) argued,

Success in college is enhanced for students who possess interpersonal and social skills that enable them to interact with a diverse cross-section of academicians and peers. These skills include the ability to collaborate and work in a team; understand the norms of the “academic” culture and how one interacts with professors and others in that environment; interact with people from different backgrounds and cultures; communicate informally; and demonstrate leadership skills in a variety of settings.

On OAE experiences, participants have opportunities to lead others, practice communication and group management skills, and work collaboratively to achieve group goals (Sibthorp & Jostad, 2014). Through practice, participants can see that leadership is a skill that can be developed and improved over time and is not something that is innate for a chosen few.

Similarly, participants have the opportunity to practice self-regulation on OAE experiences, specifically emotion regulation. OAE experiences can be physically and emotionally demanding and participants have to implement a number of regulatory strategies to manage adversity and uncertainty (Sibthorp et al., 2008). Emotion regulation is regularly identified as a key skill important for college success, as students must manage emotions and distractions to meet the demands of college coursework and college life (Burnette et al., 2013; Heckman & Kautz, 2013; Nagaoka et al., 2015). OAE experiences can positively influence mindsets toward emotion regulation, as participants are able to experiment in sometimes stressful situations and learn that they are capable of managing challenge and managing their emotions in productive ways (Gookin & Leach, 2009).

**Sense of belonging.** Additionally, research has found that OAE fosters a sense of belonging when participants share a common application environment such as school or work (e.g., Bell et al., 2014; Gass & Priest, 2006). Evidence shows that when students feel they are part of an academic community, they take on desirable academic behaviors including task perseverance and engagement with lessons (Dweck et al., 2011; Sánchez, Colón, & Esparza, 2005; Walton, Cohen, Cwir, & Spencer, 2012). A sense of belonging can be broadly defined as a social connection to individuals or groups within a particular performance domain such as school or an OST activity (Walton & Cohen, 2007). Walton and Cohen (2007) examined sense of belonging and found that Black college students were more susceptible to perceptions of inclusion and exclusion than White students and that these beliefs were related to academic achievement. A subsequent study found that interventions that promoted belonging led to improved academic performance, improved sense of belonging, and higher levels of student health and well-being in comparison to control groups (Walton & Cohen, 2007). College access programs use OAE to promote or reinforce social belonging among a cohort of students intent on going to college—thereby reinforcing shared goals and norms related to higher education attainment.

## Study Purposes and Research Questions

Given the importance that college access programs that work with students from low socioeconomic backgrounds now place on noncognitive factors (e.g., see Venezia & Jaeger, 2013; Washington et al., 2016), it is surprising that there is little research on the use of OAE within these programs. Therefore, the primary purpose of this study was to explore the relation of OAE experiences to the development of noncognitive factors among adolescents in a college access program. Student self-efficacy beliefs for dealing with challenge and engaging in help-seeking behaviors, mindsets toward leadership and emotional regulation, and sense of belonging were of particular interest, as these factors have been identified as essential for college readiness and align with OAE outcomes. Specific research questions (RQ) included the following:

- RQ1: Does participation in an OAE experience within a college access program relate to changes in student self-efficacy for dealing with challenge, self-efficacy for using help-seeking behavior, growth mindsets toward leadership and emotion regulation, and sense of belonging?
- RQ2: If OAE is related to shifts in student self-efficacy beliefs, growth mindsets, and/or sense of belonging, how does the OAE component contribute to these changes?

Findings from this study may help educators, program managers, parents, and policy makers understand how OAE experiences can enhance college access programs by contributing to the development of noncognitive factors associated with college readiness.

## Method

This study involved 175 students from C5 Youth Programs, an initiative that offers mentorship, college preparation, and leadership development programs for high-potential students from urban centers in Texas, New England, Georgia, and the city of Los Angeles. Students may come from single-parent homes, reside with extended family, live below the poverty line, and/or come from high-risk neighborhoods (C5 Foundation, n.d.). Students in C5 begin the summer prior to eighth grade and the program concludes their final year of high school. During the first two summers of the program, students attend a residential camp for a month. Following ninth grade, C5 students participate in a weeklong OAE backpacking course focused on personal growth and leadership development. C5 partners with NOLS to facilitate this signature summer event. NOLS is recognized as a leading organization in OAE and its curriculum explicitly emphasizes leadership development, communication, dealing with adversity and uncertainty, judgment and decision making, and positive peer interactions (Gookin & Leach, 2009). Courses were based at NOLS branches in Washington, Idaho, Wyoming, and the Adirondacks in Upstate New York. Students traveled through the backcountry in single-sex groups of eight to 12 with peers from their regional program, along with a chaperone and two to three instructors.

To explore the relation of OAE experiences to the development of self-efficacy beliefs and sense of belonging, the study employed a repeated-measures, mixed-methods, embedded, dominant-less-dominant design. Embedded designs use quantitative and qualitative methods simultaneously, but one method supports a dominant method (Creswell & Plano Clark, 2011). In this study, the quantitative component was the dominant method with semistructured interviews providing additional insight.

## Quantitative Measures

Students completed the noncognitive factors measurement instrument (NCFMI) on the first day of their OAE experience prior to leaving for the field and on the last day of the OAE course. The NCFMI includes several measures adapted from existing instrumentation (see sections that follow). For content and construct validity, two professors from a public research university in the western United States with extensive experience in scale development reviewed the original measures and suggested changes for use with a college pathway program in an OAE context.

**Self-efficacy measures.** Self-efficacy for dealing with challenging situations (SE\_CHLNG) was measured with an 11-item scale based on self-efficacy scale development guidelines (Bandura, 2006) and specific items from the coping efficacy scale ( $\alpha = .80$  to  $.91$ ; Chesney, Neilands, Chambers, Taylor, & Folkman, 2006). The scale had several content domains, including problem-solving strategies (e.g., "Break a difficult problem down into smaller parts"), task perseverance (e.g., "Keep on working on the problem, even if I don't know how it will turn out"), and emotion regulation (e.g., "When I am struggling with something, I can stop myself from being upset by unpleasant thoughts"). The NCFMI also included a six-item scale measuring self-efficacy using help-seeking behaviors (SE\_HELP). An example statement was "Go to teachers,

instructors, counselors, or mentors when I feel overwhelmed with something and want to quit.” The items were measured on a Likert-type scale ranging from 0 (*I cannot do it at all*) to 10 (*I am highly confident I can do it*).

**Growth mindset measures.** Two four-item scales adapted from the Dweck Mindset Instrument (Blackwell et al., 2007; Dweck, 2006) measured leadership mindsets. One scale measured student beliefs concerning the malleability of leadership (MIND\_LEAD) and another focused on student beliefs about their emotion regulation (MIND\_EMO). Each scale included two items on incremental theories (growth mindsets) and two on entity theories (fixed mindset). Items were rated on a Likert-type scale with 1 indicating *strongly disagree* and 8 indicating *strongly agree*, with questions on entity theories reverse scored. Example items included “If they want to, people can change the emotions they have” and “You have a certain amount of leadership ability, and you can’t really do much to change it.” A similar short measure on implicit theories of emotional regulation had a Cronbach’s alpha of .75 (Tamir, John, Srivastava, & Gross, 2007) and measures of implicit theories of leadership reported Cronbach’s alphas of .62 (Burnette, Pollack, & Hoyt, 2010; four-item) and .94 (Werth, Markel, & Förster, 2006; eight-item).

**Sense of belonging measures.** Another section of the NCFMI examined student sense of belonging related to school and C5, which are two distinct academic communities. Sense of belonging in school (BEL\_SCHOOL) was used as a comparison for sense of belonging at C5 (BEL\_C5). This 14-item scale was based on the Psychological Sense of School Membership (PSSM; Goodenow & Grady, 1993). The PSSM has been shown to have a Cronbach’s alpha above .80 (Anderman, 2003; Goodenow & Grady, 1993). The original 18-item PSSM measure was modified so that there was an equal number of positively and negatively worded questions and was shortened to account for possible testing fatigue. The final measure retained the most applicable items that aligned with the purpose of the study. The measure used a Likert-type scale ranging from 1 (*totally false*) to 8 (*totally true*). Negatively worded items were reverse scored for analysis and reporting.

## Qualitative Component

Qualitative interviews with a subset of 27 (15.4%) students took place in person at NOLS branches hosting C5 courses. The purpose of these semistructured interviews was to gain a greater understanding of the student experience. Questions focused on what students learned from the course, changes to self-perceptions and beliefs, and other salient topics related to the experience. Representative questions included “What were some highlights from your outdoor course?” “What were some challenges that you encountered?” “Tell me about your relationships with your C5 peers.” and “Why do you think C5 sent you on this trip?” along with follow-up questions to prompt deeper responses (Creswell, Hanson, Clark Plano, & Morales, 2007). Two research faculty members with experience in qualitative research reviewed the interview protocol. The procedure used was chosen so that students from each C5 location would be included, male and female voices would be balanced, and a broad range of experiences and opinions would be sought, while the number of interviews would be kept manageable.

## Quantitative Data Analysis

Quantitative measures were analyzed via multilevel models (MLMs) that suited the nested structure of the data (Kwok et al., 2008; Raudenbush & Bryk, 2002). MLMs maximize the ability to identify associations between outcome variables and predictors and to understand the nature of any associations. In this study, time was nested within students and students were nested within expedition groups, creating nonindependence, and group sizes varied, resulting in unbalanced data. All analyses were run via HLM 7.0.

Data from 175 students were screened and cleaned. Ten subjects were removed due to incomplete data, resulting in 165 matched pre- and postcourse instruments. After data screening and cleaning, the first step in MLM analysis requires the creation of a baseline model for each outcome variable to determine if variance could be accounted for at the occurrence, individual, and group level. Intraclass correlations were computed to determine within-subjects, between-subjects, and between-group variance. Models that had less than 10% variance at the group level were then simplified to two-level models for parsimony (Raudenbush & Bryk, 2002). A series of MLMs was then used to examine the relationships between OAE participation (time in weeks) and each outcome variable. Each model controlled for self-identified gender at Level 2.

## Qualitative Analysis

The interviews were transcribed and analyzed via systematic qualitative techniques (Miles, Huberman, & Salanda, 2014; Saldana, 2013). This process allows the researcher to identify salient themes and connections within the data. Interviews were transcribed and coded via a three-stage process with the aid of HyperRESEARCH software (ResearchWare, 2013). First, transcripts were open coded via in vivo and descriptive codes. Next, focused coding with constant comparison in conjunction with research memos and notes was used to identify themes and adjust and collapse codes. Finally, axial coding was used to identify connections among themes and relevant codes. Codes, themes, and connections were then evaluated and confirmed by two additional researchers with experience in qualitative research involving youth. Quantitative and qualitative components were then brought together for a comprehensive analysis. Data from each source was used to identify converging conclusions.

## Results

The final sample of 165 C5 students were enrolled on 20 different courses based out of four NOLS branches (Washington, Idaho, Wyoming, Adirondacks). Students were 14 to 16 years of age ( $M = 14.9$  years) with females making up 56.5% of the sample. Of the students, 46.4% identified as African American, 39.3% as Hispanic/Latino or Latina, 9.5% as White, 2.4% as Asian American, and 1.2% as Native Hawaiian or Pacific Islander.

## Quantitative Results

The quantitative measures sought to answer the first research question: Does participation in an OAE experience within a college access program relate to changes in student self-efficacy beliefs, leadership mindsets, and sense of belonging? Analysis of the NCFMI measures revealed changes from pre- to postcourse measures in the mean scores in self-efficacy for dealing with challenge (SE\_CHLNG), self-efficacy for using help-seeking behavior (SE\_HELP), and sense of belonging at school (BEL\_SCHOOL). The use of an MLM model allowed for a better understanding of the influence of time (pre- to postcourse), the control variable of self-identified gender, and expedition group on outcome measures.

**Self-efficacy measures.** Both self-efficacy measures (SE\_CHLNG,  $\alpha = .89$ ; SE\_HELP,  $\alpha = .90$ .) were simplified to two-level models, as the inclusion of self-identified gender rendered variance attributed to the expedition groups insignificant. Controlling for gender, the two-level models revealed that time was significant for SE\_CHLNG,  $\beta = .76$ ,  $t(164) = 7.59$ ,  $p < .001$ , and SE\_HELP,  $\beta = .83$ ,  $t(164) = 5.74$ ,  $p < .001$ . Participation in the OAE experience was associated with a .76 increase in the SE\_CHLNG score and a .83 increase in the SE\_HELP score, both on an 11-point scale. The associated effect size correlations (Kwok et al., 2008; Raudenbush & Bryk, 2002) for time at Level 1 were  $Pseudo R^2 = .25$  for SE\_CHLNG and  $Pseudo R^2 = .16$  for SE\_HELP, indicating a small to medium effect size for both (Cohen, 1992). The intraclass



coefficient was .50 for SE\_CHLNG and .56 for SE\_HELP. In this context, the intraclass correlation coefficient represents the percentage of variance between subjects.

Students who self-identified as female were significantly associated with lower levels of self-efficacy in both scales at both measurement points. For SE\_CHLNG, being female was associated with a score that was .95 points lower than the score for males,  $\beta = -.91$ ,  $t(163) = -4.93$ ,  $p < .001$ ,  $Pseudo R_s^2 = .05$ , and a similar association was found when SE\_HELP was the outcome variable,  $\beta = -.973$ ,  $t(163) = -3.31$ ,  $p < .001$ ,  $Pseudo R_s^2 = .01$ .

**Leadership mindset measures.** Two-level models were run for both MIND\_LEAD ( $\alpha = .54$ ) and MIND\_EMO ( $\alpha = .63$ ) since Level 3 variance was less than 10%. In the full model, both within-subject and between-subject predictors were nonsignificant. In addition, despite evidence of short mindset scales producing acceptable reliabilities (Burnette et al., 2010; Tamir et al., 2007; Werth et al., 2006), observed scale reliability was low for both measures in these data, particularly MIND\_LEAD.

**Sense of belonging measure.** Sense of belonging measures were analyzed via two-level models, as between-group variance accounted for less than 10% of variance at Level 3. For BEL\_C5 ( $\alpha = .74$ ), the Level-1 predictor of time and the Level-2 control variable of gender were both nonsignificant. However, time,  $\beta = .19$ ,  $t(164) = 2.66$ ,  $p = .009$ ,  $Pseudo R_s^2 = .11$ , and gender,  $\beta = -.40$ ,  $t(163) = -2.15$ ,  $p = .03$ ,  $Pseudo R_s^2 = .04$ , were significant predictors for BEL\_SCHOOL ( $\alpha = .75$ ). This means that for a week of OAE participation, BEL\_SCHOOL went up by .19 points on an 8-point scale, but the effect size was small. The BEL\_SCHOOL score for female students was .44 points lower than that for their male peers. There was a statistically significant difference between BEL\_C5 and BEL\_SCHOOL on precourse, BEL\_C5,  $M = 6.92$ , 95% CI [6.76, 7.09], BEL\_SCHOOL,  $M = 5.97$ , 95% CI [5.77, 6.17], and postcourse, BEL\_C5,  $M = 7.04$ , 95% CI [6.88, 7.20], BEL\_SCHOOL,  $M = 6.16$ , 95% CI [5.96, 6.36], measurements. C5\_BEL had higher mean scores at both time points, indicating that the students reported a higher sense of belonging at C5 than in school.

## Qualitative Findings

Qualitative interviews included 13 females and 14 males with representation from each C5 location and students from courses based out of NOLS branches in Washington, Idaho, and Wyoming. Interviewees identified as African American (51.9%), Hispanic/Latino or Latina (33.3%), White (7.4%), and Asian American (3.7%). Interviews were between 15 min and 1 hr, resulting in approximately 14 hr of audio. The lead author and the second author conducted the interviews.

Analysis of the interviews addressed the second research question, which sought to understand the contributions of an OAE experience to changes in self-efficacy, leadership mindsets, and sense of belonging. Findings provide some context for understanding the quantitative results of the study, particularly the effects of the OAE experiences on self-efficacy beliefs and the role of C5 in students' lives.

**Understanding changes to self-efficacy.** C5 students reflected on the experience and explained how physical, intrapersonal, and interpersonal challenges changed their self-beliefs. Many of the students reported that this was one of the most challenging experiences of their lives. While they had been on shorter, less rigorous backpacking trips during previous summers with C5, this experience proved to be a *benchmark challenge experience*, an experience that provides perspective when evaluating other challenging life experiences. A female from New England said that the OAE experience "kind of helps you for future challenges, knowing that you have done something hard and you can get through it even if you think you can't." See Table 1 for representative quotes.

What about the weeklong trip influenced their self-efficacy? First, students felt accomplished that they completed the trip, noting that they had to "push through" fatigue and wanted

to quit. Second, the experience put them out of their comfort zones and students noted that they had to adapt to the new environment, new living arrangements, poor weather, and homesickness. Students talked about dealing with the unexpected—a long hike day, wet clothes, terrain—and understanding the value of adapting. Third, students appreciated the opportunity to practice leadership skills, from serving as leader of the day to working to be an active and supportive follower. Leadership also involved dealing with interpersonal conflict, managing frustration with others, and practicing patience.

**Table 1**

*Self-Efficacy for Dealing With Challenge: Representative Quotes*

| Theme                     | Quote                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pushing Through Adversity | “This was a once-in-a-lifetime experience [that taught us] we can come back, we can have some scrapes, some bruises . . . but this trip [will] help with motivation for what we are going to do in the future. So if we actually feel like something is too hard, like a class . . . and you’re struggling, just think back to your hiking experience and think ‘this is nothing.’ It keeps you motivated to push on . . .” (Male from C5 Texas) |
| Being Out of Comfort Zone | “I think I became more self-confident . . . but when I am outside of my comfort zone it goes really low. Here it grew more because I was outside my comfort zone completely and I was able to push myself and make the goals that we had set for each other. I was able to get through this even though this is hard for me, even though I am not used to it.” (Female from C5 Los Angeles)                                                      |
| Confidence in Leadership  | “I think the biggest lesson was not to underestimate myself. I think I do that a lot. These people, this whole week, have been supporting me and believing in me, and trusting me to lead them places.” (Female from C5 Texas)                                                                                                                                                                                                                   |
| Dealing with Others       | “I’ve learned to adapt to others’ personalities. Not everyone is going to be how you want them to be. Everyone is unique in their own way and you just have to realize that and just adapt to it. Just don’t try to make them change or something like that . . .” (Male from C5 Georgia)                                                                                                                                                        |
| Practicing Patience       | “I learned how to be comfortable in a situation even though you don’t like it . . . just keeping calm.” (Male from C5 New England)                                                                                                                                                                                                                                                                                                               |

The social group, while occasionally a source of conflict or frustration, was often an important support mechanism. Through teamwork and positive encouragement, students were able to meet daily objectives such as getting to camp and overcome negative psychological states. Students noted that this OAE experience drove home the importance of maintaining a positive attitude when dealing with adversity. It was easy to see the impact of attitude in an environment where it is difficult to walk away from the challenges at hand. One female student from New England said one of her biggest takeaways was that “even though you can’t change a situation, you can definitely change your attitude toward it and that can make it a lot different.”

The team-oriented nature of the OAE experience also had an effect on student perspectives on the value of seeking out help. Students had to work together to navigate, prepare meals, and

manage adversity. A female student from Los Angeles articulated a key lesson shared by several interviewees:

Back at home I try to be as independent as I can for my age [and] independent meant *never asking for help*. Always being able to do it on your own. On this trip what I really learned was that it's okay to ask for help when you really need it. Like it doesn't make you not independent if you ask for someone's help. That's something I am going to take back home, because, you know, I always said 'you're independent, you don't need anyone else's help,' but now I realize I could be independent and I also could ask for people's help. It doesn't make me dependent on anyone.

Other students talked about the new communication skills and confidence for working with peers and adults that they gained through the experience. In the unfamiliar and challenging context of the OAE experience, students had to rely on each other while seeking advice and guidance from NOLS instructors and their C5 chaperones. Several students talked about taking home with them this lesson of reaching out to others.

**Growth mindsets.** All of the interviewees shared that they believed that leadership was a skill to be learned. While interviewees had different levels of self-efficacy in leading others or being a vocal leader, students referenced C5's leadership goals and curriculum often. During residential camps following seventh and eighth grade, as well in the months leading up to their OAE experience following ninth grade, students are exposed to C5's leadership classes. Interviews revealed that students understood that they were involved in C5 to become leaders in their schools and communities. A male student from C5 New England explained that the OAE experience was a capstone experience for his leadership education to that point:

Well they talk a lot about giving back to the community and to your community and going to college . . . if you take [the trip] seriously, you'll definitely gain more leadership skills . . . It takes a lot for people to do this. Not every kid off the street would be able to do . . . so [C5] gets you ready . . . they've been talking about [this trip] for years . . . It's a big step toward graduating from C5 and going to college.

A leadership mindset seemed well established among interviewees. However, students expressed that there were new leadership lessons they would take back with them. A female student from New England talked about using specific skills such as "standing up for yourself," working with others you do not agree with, holding true to your beliefs, and managing "aggravating situations" with others. The experience gave the students opportunities to practice leading peers.

Interviews led to findings concerning emotion regulation that were not entirely consistent with the quantitative data. Students discussed the value of remaining positive and staying calm. However, when it came to conflict resolution, several male and female students shared that the physically and psychologically demanding nature of the course sometimes led to conflict. "We had arguments . . . we had ups and downs with everybody," said one female student. Another female student said, "Sometimes we were really good and then we would have arguments and it would be really bad." Several male students admitted they got into heated arguments with peers over food, directions, or personality conflicts.

For some, the confrontational behaviors that emerged under pressure did not reflect mature emotion regulation. Yet the experience allowed students to experiment with various conflict resolution and emotion regulation strategies within a dynamic context. Interviews revealed that students reviewed these negative experiences with adult leaders during daily debriefings, which often resulted in personal reflection about how they could improve in similar stressful situations. Thus, despite a lack of quantitative support for gains in emotion regulation, the qualitative data support the programmatic attention to this domain.

**Sense of belonging in C5.** Conflicts arose during the OAE experience, but interviews made it clear that students felt it was a positive experience that allowed them to deepen social relationships with peers and reinforce their connection to C5. A common theme that arose from interviews was that students believe that “C5 is family.” Students talked about the close friendships made at C5, especially during the summers at residential camp. When reflecting on friendships at school versus friendships at C5, a Texas student explained, “They are completely different. [At school] we’re not as close. Here we’re like family. We tell each other everything even though we don’t see each other every day.” Similarly, a C5 Los Angeles student cited that the reason they were close was “because you go through so much together. We’ve seen each other struggle . . . So you’re comfortable around them and they are not judgmental.” The C5 program brings students with similar backgrounds and college aspirations together and fosters a supportive community that encourages participants to persevere through the rigors of high school and college preparation. Many of the interviewees expressed that such a community was not present at their respective schools.

Students talked about the OAE experience as a chance to build on existing relationships, similar to how the trip allowed them to build on existing leadership skills. A Texas student talked about his gratefulness to have a bonding experience with a group he had known for years: “Being with C5 for three years so far . . . we’ve grown as a family, so it’s been fun to hang out with these guys for a week.” Others were able to make stronger connections to peers they did not know as well. A Los Angeles student explained, “It was really nice because we had some similarities and some fears that were exactly the same. We talked about our problems.” While qualitative measures did not demonstrate an increase in sense of belonging, interviews revealed that students had a deep connection to C5 that was established before the trip. This may have contributed to a ceiling effect in measures. Students expressed that the backpacking trip was a culminating experience where they were able to leverage their existing relationships with others to complete a challenging leadership expedition and then move on to the college preparation programming they would experience in the coming years.

## Discussion

The qualitative findings provide context for understanding changes in NCFMI measures following the OAE experience. Certainly, the backcountry experience gave students opportunities to encounter and overcome adversity, contributing to improved self-efficacy for dealing with challenge. Additionally, the small-group nature of the course provided a setting where teamwork and seeking help from others were encouraged, perhaps changing personal self-efficacy for help-seeking behavior. Interviews also shed light on how the C5 program influences student mindsets toward leadership as a skill and how C5—during the OAE experience and in programs and activities in the first two years—cultivates a sense of belonging among students. This section puts these findings into perspective in regard to research on noncognitive factors, OST experiences including OAE, and college access programs.

First, it is important to revisit the opportunity gap, the central problem of interest. Students from low socioeconomic backgrounds simply do not have access to the same opportunities as students from families with more resources (Putnam, Frederick, & Snellman 2012). The C5 Youth Program provides its students with a series of experiences that may otherwise be out of reach for them. In the years leading up to the OAE trip examined in this study, students attended residential camp in the summers following seventh and eighth grade and participated in bimonthly enrichment activities. This OAE experience was a key culminating event provided by C5 that allowed students to practice the leadership skills they learned in previous years within a dynamic environment. This experiential context allows students to build confidence, self-efficacy, and

positive mindsets and builds a community of like-minded individuals with similar aspirations, similar to other quality OST contexts (cf. Durlak et al., 2011; Fredricks & Eccles, 2006).

One of the research questions this study sought to answer was whether participation in this OAE experience was related to changes in student self-efficacy beliefs in dealing with challenge and using help-seeking behavior, growth mindsets toward leadership and emotion regulation, and sense of belonging, and if so, understanding how these changes occur. One must recognize the significance of the entirety of the C5 experience, from seventh grade to college, as it is a series of quality experiences that contribute to positive student trajectories or *developmental cascades* (see Masten & Cicchetti, 2010). Precourse measures of self-efficacy, leadership mindsets, and sense of belonging to C5 were arguably high. However, it appears that intense and intentionally designed OAE experiences as part of a larger college access program can contribute to that overall positive trajectory.

The OAE experience in this study was associated with increases in self-efficacy for dealing with challenge and self-efficacy for using help-seeking behavior. Though the effect sizes were small to medium in strength, student interviews showed that the challenging nature of the course pushed them to reevaluate their abilities to deal with and manage adversity. Evidence from student interviews confirmed findings from other studies that found OAE participation was related to functioning well in difficult circumstances, practicing leadership-related competencies, working collaboratively and cooperatively, and navigating the social structure of the group (e.g., Hattie et al., 1997; Sibthorp et al., 2008; Sibthorp & Jostad, 2014). The physical, mental, and interpersonal challenges of backpacking in a remote environment provided real and sometimes raw experiences where students had to draw upon their inner resources and the support of peers and instructors. As a result, students left with benchmark challenge experiences as reference points for the future.

The value of strong self-efficacy beliefs for dealing with challenge cannot be understated. These beliefs are associated with student persistence and the ability to work toward long-term goals—factors important for college success (Duckworth et al., 2007; Farrington et al., 2012). Similarly, the OAE experience allowed students to see the importance of seeking help when needed. As nonexperts in the backcountry, they had to seek help from others. In times of homesickness, they realized they could reach out. In either scenario, students had opportunities to see that seeking support did not equate to weakness. Such help-seeking behaviors are essential in college, especially among first-generation college students who may be embarrassed to seek help or not know how to receive support (Roderick, Nagaoka, & Coca, 2009; Yeager & Walton, 2011).

Social belonging is also important for college success and is often a priority of college access programs and first-year college programming (Shechtman et al., 2013; Walton & Cohen, 2011). Although quantitative measures of sense of belonging to C5 did not show any statistical difference pre- and postcourse, it is possible that sense of belonging was well established before the trip. Interviews revealed that the OAE experience helped students reinforce and celebrate existing relationships while building new friendships.

A sense of belonging within an academic community has been associated with student motivation and positive academic behaviors (Dweck et al., 2011; Farrington et al., 2012; Walton & Cohen, 2011). As an intact group, it is likely that students were able to carry friendships and their attitudes toward C5 from a residential camp and activity context to the OAE experience, and vice versa (cf. Bell et al., 2014; Gass & Priest, 2006). C5 is clearly providing a community, one that many students consider a family. The difference in students' sense of belonging between C5 and school may suggest that students feel that C5 provides the support, camaraderie, and shared academic aspirations that are lacking from their respective schools.

## Implications and Future Research

This study provides additional evidence that OAE experiences can contribute to the development of noncognitive factors and be an effective component of a larger college access program. OAE offers many of the desired outcomes associated with quality OST enrichment opportunities, specifically in areas of self-efficacy that can transfer to other school and life contexts. It also offers a mechanism for students to create and reinforce relationships, creating or bolstering a sense of belonging within an academic community. As debates continue about how to close the opportunity gap, OAE remains an option for college access programs and educational policy makers.

Despite the potential of OAE in college access programs, it remains difficult to access and expensive; this greatly limits the utility of OAE as a wide-scale intervention. However, as others have pointed out (e.g., Sibthorp & Morgan, 2011), many of the programmatic aspects inherent in OAE can be prioritized and incorporated into other, more accessible OST offerings. In this study, students often described OAE as an emotionally intense and authentic practice setting where they were impelled to overcome difficulties. Their general unfamiliarity with the backcountry setting necessitated that they reach out to others for assistance, remain flexible, and adapt to new environments. Such examples suggest clear parallels to college for many of these students and illustrate programmatic aspects that might be prioritized in more accessible programming.

There continues to be a need for more research on the connection between OAE participation and the development of noncognitive factors. A weeklong intervention can make an impact, but student development occurs over years and a multitude of experiences. A future study may want to look at the influence of participation in college access programs, such as C5, on noncognitive factors over a longer period. For C5 students, it was clear that their mindsets toward the malleability of leadership ability were well established prior to the OAE experience. Student sense of belonging to C5 was also stable. A longitudinal study that follows students from the beginning of program participation may reveal how particular noncognitive factors develop within a larger system. More complex research designs that include additional variables unavailable in this study may provide additional insight on relationships between noncognitive and other variables such as family income, GPA, or competing OST activities. Following a cohort of students over time would also allow opportunities for the collection of rich qualitative data on student development. Finally, it will be essential to understand the long-term impacts of an OAE experience within a college access program, as emerging research suggests that, for some outcomes, low-income students may benefit more from such experiences than their more affluent peers (Blomfield & Barber, 2011; Marsh & Kleitman, 2002; Randall & Bohnert, 2012). Future research will also want to see if gains from OAE participation last beyond the end of the course.

## Limitations

This study was limited by its design, population, measures, and the unique nature of the intervention. The lack of a control group and the specific characteristics of C5 and a NOLS course limit the generalizability of the findings. A future study involving OAE and college access programs should use a control group or a repeated-measures crossover design so researchers can attribute any changes to intervention. The results of this study show promise but need to be tested via a true experimental design. Second, the measures are dependent on accurate self-perceptions and honest self-reports; the mindset measure needs further development given the observed ceiling effect and low internal consistency. Additionally, the life experience of the researcher likely influenced the coding interpretation of student narratives, and a team of coders with various experience may have helped reduce single-coder bias.

## Conclusion

The opportunity gap remains a concern for those who wish to address disparities among socioeconomic groups. Students with the least resources do not have access to experiences that can support their development and ultimately their educational and career aspirations. While it is important to reduce disparities in the quality of classroom education, we must also find ways to provide quality OST experiences for all students. On the whole, college access programs, such as C5, recognize that students from low socioeconomic backgrounds need academic support; help navigating the path to college; and access to experiences that help students understand themselves, their capabilities, and their place within an academic community. This study looked at one of many experiences within C5's programming: a challenging OAE experience. It found that a well-designed OAE experience can contribute to the broader goals of a college access program. Specifically, OAE can build self-efficacy for dealing with challenge and bolster student self-efficacy for help-seeking behavior. Moving forward, it will be important to understand how college access programs can use a series of quality experiences to bridge the opportunity gap, propelling high-potential students with low SES toward success in higher education and beyond.

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