

Beyond 365 Days:

A Retrospective Evaluation of Trekkers

October 2023





This report was developed for Trekkers Inc. by the Data Innovation Project, which is part of the Cutler Institute for Health and Social Policy at the University of Southern Maine. Portland, Maine, October 2023.

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DIP RESEARCH DISCLOSURE STATEMENT

The Data Innovation Project recognizes that the study of the social realm can never be truly neutral and that as applied researchers our specific positionalities in social strata may influence our experience and interpretation of reality as well as our approach to understanding reality. For this reason, we believe it is our responsibility to be transparent about who we are as meaning makers and producers of knowledge. We are a team of educated, middle-class, white professionals. We may be homogenous in many ways, but we are not afraid of dialogue. If you believe we have overlooked a critical perspective or interpretation in our work, please tell us and we will strive to address it.

Introduction

The middle school and early high school years represent a critical developmental stage for young people, where stable relationships with non-family members can increase their school engagement and help them to overcome social-emotional challenges. Numerous studies have demonstrated that positive youth development programs providing students with meaningful and sustained participation, opportunities for adult and peer interactions, structured exploration and risk-taking, and college and career exploration can help them learn important skills and self-awareness, leading to longer term successes (Deschenes, et al, 2020; Center for Progress 2015). Yet, major opportunity gaps exist, with many rural students in particular lacking access to important resources that build these skills and broaden their sense of what is possible. These opportunity gaps have been well documented as contributing factors to lower rates of success in educational achievement, career prospects, and other life aspirations (Cordes, et al., 2022). This pattern shows up in Maine, where students consistently have high rates of high school graduation, ranking 23rd in the country in 2020, yet low rates of college initiation (Brezovsky & Silvernail, 2000; Silvernail et al., 2014; United Health Foundation, 2023). In response, numerous organizations and programs in Maine focus on providing youth with out of school educational opportunities and engagement, building social-emotional well-being, and bridging post-secondary education pipelines.

About Trekkers

The Trekkers program in Rockland, ME is a non-profit outdoor-based mentoring program that has served young people in mid-coast Maine since 1994. Its unique long-term mentoring model supports students over six years that begins when they are in 7th grade and continues until they graduate high school. Trekkers' model focuses on building social, emotional and intellectual resiliency in young people through one-to-one peer mentoring, as well as the use of expeditionary learning, community service and adventure-based education. Trekkers' programs are designed to provide an ongoing supportive network for young people in the community by connecting them with caring adults while fostering valuable life skills that help the students prepare for a happier and more successful life beyond high school graduation. Trekkers Youth

Programming Principles are rooted in best practices and established research and encompass all of the elements detailed above.¹

TREKKERS YOUTH PROGRAMMING PRINCIPLES

1. Designing Intentional Program Delivery Systems for Long Term Engagement
2. Fostering Mutual Trust Between Families and Program Staff
3. Developing a Skilled Network of Caring Adults and Peer Mentors
4. Applying a Comprehensive Approach to Youth Development Strategies
5. Creating a Community Support Network
6. Prioritizing Informal Relationship-Building
7. Expanding Worldviews
8. Embracing Voice and Choice
9. Encouraging Community Engagement to Foster Personal and Societal Awareness
10. Raising Optimism and Post-Secondary Aspirations
11. Utilizing Validated Assessment Tools to Promote Social-Emotional Development in Youth

Trekkers uses a program selection model that is inherently randomized, increasing the validity of potential analyses around their participants. Trekkers staff first visit schools located within the 6-town service community² to pitch the program, ensuring that a variety of diverse staff are represented in their presentation. The schools then send home letters with the students to provide them and their families with more information about the program. Other forms of recruitment include newspaper articles, leaving printed copies of applications at schools, flyers at community centers, and social media postings on and off the official Trekkers pages. As an

¹ More about each principle can be found on Trekkers website: www.trekkersinstitute.org/principles/

² The towns are Thomaston, South Thomaston, Owl's Head, Cushing, St. George, and Rockland.

organization, Trekkers receives approximately 40 new applications each year for 20-40 participant slots in their program. Participants are selected through a lottery system where students are separated by gender and school, and then randomly selected.

When students enter the program, they are assigned to a cohort of peers and a program manager. Although some participants leave and new ones join, on average Trekkers maintains an 85% retention rate. Program managers convene team meetings with the entire cohort and spend time with participating students individually or in small groups, attending outside activities students participate in at school or in the community, and meet with parents, teachers, coaches, and guidance counselors as needed. Trekkers cohorts also connect with a network of volunteers who attend meetings and accompany the group on outings and trips. Program managers and volunteers spend time with participants in smaller groups, and often attend milestone events to demonstrate their support.

Trekkers centers its work around preparing each cohort for expeditions and trips on which participants explore the world, both natural and cultural. The following are examples of the trips participants have experienced throughout the program duration:

- Seventh graders new to the program go on a three-day excursion to Acadia National Park in Maine to canoe or kayak, rock climb, hike, and camp.
- Eighth graders learn to make decisions together as they plan trips during the year. Their ten-day expeditions have included hiking Mt. Osceola in Waterville Valley and visiting renewable energy facilities.
- In ninth grade, students go on a ten-day expedition to explore cities and culture, trekking to places like Washington, DC and convening on a student exchange with Urban Trekkers.
- Tenth graders explore and learn about a new landscape. In past years, participants have travelled to the Grand Canyon, the Florida Everglades, or the Northwest rainforests on their twelve-day expedition.
- Eleventh graders think about their future. On their 10-day expedition, they visit colleges or trade schools of interest, explore different career options, as well as goals and strategies for personal well-being.
- Twelfth graders embark on a five-day wilderness adventure which includes a 36-hour solo excursion as a time of reflection, celebration and intention-setting as they step into adulthood.

Purpose of this Report

In 2022, Trekkers reached out to a team of researchers at the Data Innovation Project within the University of Southern Maine’s Catherine Cutler Institute to engage in an exploratory impact evaluation of their program model. The purpose of this report is to share the results of the exploratory analyses conducted by the research team. The report first shares the methodology, including the primary research questions, data sources, samples, and the statistical methods used to conduct the analysis. We then present the findings from each analysis, which is followed by a discussion in which we weave together the findings to present a synthesis of results and the implications for Trekkers, Inc., its partners, and other youth programs.



THEORETICAL UNDERPINNINGS OF THE TREKKERS MODEL

Abundant literature has shown that positive youth development, mentoring, and social emotional well-being have long-term implications of success for young people as they navigate the transition to adulthood (Bowers et al., 2015; DuBois et al., 2011; Lerner et al., 2012; Jekielek et al., 2002; Pittman, Irby & Ferber, 2001). Moreover, students from majority rural states, like Maine, have unique needs that must be addressed for their future success. Such needs include developing greater trust and empathy for others and having a strong support system of peers and trusted adults (Brezovsky & Silvernail, 2000; Donaldson, 2000; Miller, 2018). These supports must be especially present during a young person's middle and high school experience, as they are crucial to the development of future aspirations (Miller, 2018; Silvernail et al., 2014).

Effective positive youth development programs include activities that help youth build important life skills and encourage positive outcomes including high school graduation, college attainment, participation in community service, and positive relationships (Gray, 2011; Lerner & Lerner, 2011). For example, these activities enhance youths' competence, connections, character, confidence, and contribution to society, and promote a sense of belonging, resiliency, and self-worth. "Out-of-school-time" activities encourage youth to take initiative, learn responsibility, and develop leadership, strategy, and teamwork skills, all of which contribute to later success (Larson, 2000; Larson & Hansen, 2005; Larson, Hansen & Moneta, 2006; Larson, Hansen & Walker, 2005; Larson & Walker, 2006; Larson, Walker & Pearce, 2005; Oregon Commission on Children and Families).

Mentorships increase the likelihood that young people will attend college, building aspirations for higher education and employment (Bruce & Bridgeland, 2014; DuBois et al., 2011; Herrera et al., 2007). There are also more benefits to youth when mentor relationships are longer term and driven by trusting relationships (Bruce & Bridgeland, 2014; DuBois et al., 2011; Garringer et al., 2015; Grossman et al., 2012; Lerner & Lerner, 2011; Rhodes & DuBois, 2006). Youth with mentor relationships more frequently participate in sports, extracurricular activities, clubs, school council and volunteer opportunities than those youth without mentorships (Bruce & Bridgeland, 2014; Lerner et al., 2012). Similarly, peer support encourages behavioral and emotional school engagement for youth (Bruce & Bridgeland, 2014; Lerner et al., 2012).

Multiple studies have shown that mentor relationships and positive youth development programs benefit youth developmentally, preventing negative outcomes and promoting positive outcomes, including the development of physical, social, cognitive, vocational, and moral

competence (Bowers et al., 2015; DuBois et al., 2011; Lerner et al., 2012; Pittman, Irby & Ferber, 2001). Mentoring and positive youth development programs increase healthy behaviors, attitudes, and resiliency, and decrease risky behaviors like substance abuse and delinquency (Jekielek, Moore & Hair, 2002; Pittman, Irby & Ferber, 2001).

Having post-secondary aspirations is also important because they provide hope and increase success for students. One such aspiration might be enrolling in a form of post-secondary education where there are clear benefits over the lifespan. Bachelor's degree recipients, for example, earn anywhere from \$500,000 to a million dollars more over 40 years than non-graduates of college (Brezovsky & Silvernail, 2000). On-time graduations, adequate preparation and college persistence are all variables that can further influence the success of a student (Silvernail et al., 2014).

Methods

This evaluation analyzed three quantitative data sources, and used a variety of methods answer the following research questions, which are aligned with the Trekkers logic model and represent the program's short-, mid- and longer-term outcomes.

1. To what extent are youth who participate in Trekkers more likely to exhibit social-emotional strengths at the start of 9th and 10th grades, when compared to similar 9th and 10th grade students at the same school who did not participate in Trekkers?
2. To what extent do Trekkers' participants show growth over time in terms of social-emotional well-being?
3. To what extent do Trekkers' participants exhibit a greater degree of educational success when compared with their peers?
 - a. Does a relationship exist between Trekkers participants' social-emotional well-being and their post-secondary educational success?

The study relied upon three data sources: the Holistic Student Assessment (HSA) which is a self-assessment measure of strengths and challenges; attendance and achievement data from the local area high school; and data from the National Student Clearinghouse. Below are fuller descriptions of each of the data sources used.

Data Sources

Partnerships in Education and Resilience (PEAR); Holistic Student Assessment. The **Holistic Student Assessment (HSA)** is a validated tool developed by PEAR and designed to assess students' social-emotional development across 14 constructs that group into three life skill categories: resiliency, relationships, and learning and school engagement. It consists of 61 questions on which students self-report using a 4-point Likert scale ranging from "Not at all" to "Almost Always." Trekkers administers the HSA at the start of every program year with all its program participants and uses the results to tailor both group programming and individual activities with participants; records go back to 2014 and include 766 individual assessments taken by 343 Trekkers participants. Oceanside High School, the local school with which Trekkers works closely to recruit students, also administers the HSA to its 9th and 10th grade students. In

2021, the permission forms for all students were modified to allow PEAR to share student-level data with Trekkers and the research team. Once the assessment had been fully administered and PEAR had completed their internal cleaning and validation processes, they shared the data with Trekkers for all students who completed the assessment. Trekkers staff identified their students, removed any personal information, and forwarded the data file to the research team.

Local school data. Trekkers has a long-standing partnership with Oceanside High School, which most of its students attend. The program routinely receives student referrals and student information from the high school, which is authorized through its standard program consent to participate. With help from Trekkers program staff, the research team submitted to the school a list of Trekkers participants from a five-year time period. The school matched and returned individual student-level data for program participants for the following items: total number of absences each year (excused and unexcused); total days enrolled at the school; 12th grade GPA; and final graduation status. That file was again shared with Trekkers, Inc. who removed identifiable information from the file and shared it with the research team. The school also provided aggregated statistics for the comparison grades and years, specifically: the number of students in each attendance category of enrollment days missed; the average proportion of enrollment days missed; the total number of 12th grade students; the total number of graduating seniors; the number of graduating seniors in each GPA category; and the mean GPA among 12th graders.

National Student Clearinghouse.³ The National Student Clearinghouse runs the StudentTracker for Outreach Programs to help programs accurately track the postsecondary enrollment and degrees of former participants. More than 3,300 participating postsecondary institutions share information with the NSC, which represents data for 96% of all students in U.S. higher education institutions. For an annual fee, programs can upload student names and dates of birth; the NSC matches those records to their clearinghouse database and provide information on all institutions attended and their characteristics, enrollment status, graduation, field of study and degree program. The DIP and Trekkers submitted a file containing records for 138 Trekkers' participants from a seven-year time period. The resulting file provided information for each individual for whom a successful match was found. In addition to the program-specific data

³ Founded in 1993, the National Student Clearinghouse is a nonprofit, nongovernmental organization and the leading provider of educational reporting, data exchange, verification, and research services.

analyzed above, the state of Maine produces annual reports using the Clearinghouse data for every high school in the state, including Oceanside High School. The public reports include the numbers of students who initiate, persist, and graduate from college and were used to compare the successes of Trekkers' students to their peers at Oceanside High School.

Samples, Design and Analysis

Table 1 summarizes the final sample for each of the three major analytic methods used in this research study.

Table 1. Final Samples, by Study Component

	Social-Emotional Well-being		Academic Engagement	
	9 th and 10 th Grade Matched Comparison	Longitudinal Cohort Analysis	Secondary School Administrative Data	Post-secondary Enrollment Data
Initial	158	343	138	138
Excluded	114	254	32	15
Criteria 1	Gender	Oceanside HS only	Trekkers Student PEAR ID Match	HSA Data Record
Criteria 2	Grade	Fall collection only	Enrolled after 2015	PEAR ID Match
Criteria 3	Age	At least 2 time points 2 years apart	N/A	N/A
Final Sample	44	89	104	123

9th & 10th Grade Matched Comparison. The research team employed a quasi-experimental design to compare one group of Trekkers participants in the 9th and 10th grades (n = 22) to a comparison group of 9th and 10th graders drawn from Oceanside High School (n=22) who were matched based on gender and grade but otherwise randomly sampled. Using data from the Holistic Student Assessment (HSA), the research team conducted a cross sectional analysis of each construct which first examined the mean distributions and then compared the two groups using an independent samples t-tests of statistical significance. As the research team's hypothesis was that Trekkers participants would perform better across the HSA constructs over time, one-tailed standards of significance were used.

Longitudinal Cohort Analysis. The research team also used a longitudinal design to analyze several HSA assessments collected from the same Trekkers' participants over time. This portion of the study initially included 123 Trekkers participants and compared their self-assessment results gathered at three different points in time. The research team began by using a repeated measures ANOVA test to explore changes in each of the 14 HSA constructs over time, but due to inconsistencies in the data, the inclusion of outliers, and missing data, none of the results were significant. Taking a different approach, the team instead ran a Paired T-test on 89 students who had HSA data at or prior to 10th grade and at or after 11th grade to analyze the change in the HSA constructs over two timepoints (first and last). We also used a Wilcoxon signed-rank test to test the data that did not meet the standard of normal distribution for a paired t-test.

Secondary School Administrative Data Analysis. For the academic data at the secondary level, the research team first compiled basic descriptive statistics for days absent, 12th grade GPA, and graduation rates for 104 Trekkers students enrolled at Oceanside High School over a five-year time period. The research team used the aggregate rates for the total Oceanside High School population (provided by the school) to conduct a Chi-square goodness of fit test; this compared the rates for Trekkers students (observed) to the total student population (expected).

Post-secondary Enrollment Analysis. For the academic data at the post-secondary level, the research team first examined the rates of college initiation, one-year persistence, and post-secondary degree completion for 123 Trekkers participants and conducted basic descriptive statistics. The research team used the aggregate rates of college initiation and persistence for the total Oceanside High School population (obtained from the Maine DOE website) to conduct a Chi-square goodness of fit test; this compared the rates for Trekkers students (observed) to the total student population (expected).

Limitations

This analysis provides insights into the social-emotional growth of Trekkers participants and their academic successes over a multi-year period. However, it is limited in scope. There are many factors that influence young people in their lifetimes, or influence program delivery, and most are unmeasured in this analysis. For example, we have no method of accounting for family dynamics, personal tragedies or community challenges. The study is also limited by the peculiarities and challenges of compiling and linking information across multiple sources and time periods. In some instances, we could not match records across data sources, which limited our capacity to explore relationships across and among data sources. Thus, our data can tell us that there is a difference between various groups or timepoints, but it does not always tell us why, exactly, that difference exists.

When interpreting the data and making conclusions, it is important to keep the following considerations in mind.

- The self-assessment data for the 9th/10th grade student comparison analysis was collected in the fall of 2021, which was the first year of school after the complete COVID pandemic shutdown. This was a difficult period for many students, and COVID disrupted the normal activities undertaken by youth development programs; Trekkers was no exception. Therefore, the program effects may be less salient at that measurement point than they would normally have been. Indeed, in many cases our results show that certain social-emotional skills showed up as being less of a *challenge* for Trekkers participants compared to their peers, rather than a notable strength.
- Missing data and extreme outliers at various timepoints in the HSA assessment data made ANOVA results inconclusive and insignificant. The team pivoted, analyzing two timepoints using a paired t-test approach. Even when the data were limited to comparing just two timepoints, many of the results suffered from a lack of normality and outliers, which necessitated the use of non-parametric tests of significance.
- Many young people take gap years in between high school and college, which may have affected the reported rates of college initiation. This is especially true for participants measured during the 2021-2022 school year, as well as at the start of the global pandemic in 2020, which delayed many people's entry into post-secondary education.

- Our analysis could not account for the possibility of various program shifts that may have occurred over the duration of our study timeframe, such as program coordinator turnover, shifts in program focus and approach, changes in social norms, community events, etc. Indeed, the data collection practices for the student assessment were less consistent in the earlier years, which led to many older assessments in our longitudinal dataset being ultimately excluded from our analysis.



Findings

The following sections present the results of our analysis, first displaying the outcomes for Trekkers participants related to social emotional well-being through a peer comparison and longitudinal analysis. We then continue to share results related to academic outcomes, including attendance, final GPA, and college enrollment. In all instances, our analysis has revealed positive outcomes for Trekkers participants when compared to themselves over time, as well as when compared to their peers, most notably in terms of emotional resilience, trust, relationships, school attendance and college initiation.

Social Emotional Well-being

As previously described in greater detail in the methodology section, the characteristics for social and emotional well-being were measured using the Holistic Student Assessment (HSA), which focuses on three life skill areas: Resilience, Relationships and Learning and School Engagement (see Box). Using this tool, the study was able to conduct two separate analyses. The first set of results compares Trekkers participants to a group of non-Trekkers students from the same area high school where the HSA was administered to 9th and 10th graders at the start of the 2021 school year. The second set of results examines Trekkers participants to themselves over time, as Trekkers administers the HSA throughout the duration of the program.

HSA SUBSCALES

RESILIENCE

Action Orientation: Engagement in physical and hands-on activities.

Emotional Control: Self-regulation of distress and management of anger.

Assertiveness: Confidence in putting oneself forward, advancing personal beliefs, wishes or thoughts, and in standing up for what one believes.

Trust: Perception of other people as helpful and trustworthy.

Empathy: Recognition of other's feelings and experiences.

Reflection: Inner thought processes and self-awareness, and internal responsiveness toward broader societal issues.

Optimism: Enthusiasm for and hopefulness about one's life.

RELATIONSHIPS

Relationship with Peers: Positive and supportive social connections with friends and classmates.

Relationship with Adults: Positive connections and attitudes toward interactions with adults.

LEARNING AND SCHOOL ENGAGEMENT

Learning Interest: Desire to learn and acquire new knowledge.

Critical Thinking: Examination of information, exploration of ideas, and independent thought.

Perseverance: Persistence in work and problem solving despite obstacles.

Academic Motivation: Incentive to succeed in school, without necessarily including general interest in learning.

School Bonding: Positive personal connections and the sense of belonging in one's

Comparison to Peers: 9th Grade/10th

As previously described, we were able to compare a small group of 9th and 10th grade Trekkers participants to their peers using data collected in the Fall of 2021, matching on gender, age and grade. Of the 44 students included, 30 identified as male, 14 identified as female. The ages of participants ranged from 14 (n = 22) to 16 (n = 10), with 15 year olds making up 34% of the sample (n = 12); the distribution was even across both groups. The analysis showed that 9th and 10th grade Trekkers participants (n=22) experienced differences in social and emotional characteristics when compared with their unaffiliated peers (n=22).

Figure 1 depicts the average score of strengths and challenges for 9th and 10th grade Trekkers participants vs non-Trekkers students on measures of resilience and relationships. The results are measured on a scale of -1 to 1 where -1 reflects an extreme challenge, and 1 reflects an extreme strength. The complete results can be found in Appendix B, Table 1.

Figure 1. Trekkers Participants Compared with their Peers, Fall 2021 (N = 44)



Figure Notes: Darker bars indicate statistically significant differences between the two groups.

◆ Indicates that area that averaged “0”, meaning it was neither a strength nor challenge.

The resilience category revealed a number of statistically significant differences between Trekkers and non-Trekkers students, namely emotion control, empathy and reflection. As shown in Figure 1, Trekkers participants had statistically significantly stronger levels of emotional control (0.18) than non-Trekkers (0.05). Levels of empathy were also shown to be more of a challenge for non-Trekkers (-0.27) than it was for Trekkers participants (-0.05), as was capacity to engage in reflection, both statistically significant findings. Similarly, the relationships category also showed statistically significant differences between Trekkers and non-Trekkers students for both adult and peer relationships. Non-Trekkers students had a statistically significant more challenges in their adult relationships (-0.32) compared to Trekkers (-0.09). Similarly, non-Trekkers students also had more challenges in their peer relationships (average score of -0.14) while Trekkers averaged 0.00, meaning neither strength nor challenge. Conversely, the HSA comparative analysis suggests school bonding as a potential area for growth for Trekkers participants, as this was an area where they demonstrated fewer strengths and more challenges when compared to their peers.

Comparison of Trekkers Participants Over Time

The research team subsequently examined the descriptive statistics of the HSA data from a pool of 89 Trekkers participants and compared each student to themselves across two timepoints which spanned at least one year and averaged 2.5 years. This analysis highlighted several areas of particular growth among Trekkers participants.

At the baseline (timepoint one), most students were in grade 9 (72%) and the remainder in grade 10, while their average age was 14.8 (ranging from 13.8 to 16.3). The sample was also 56% female identifying (n = 50) and 44% male identifying (n = 39). Table 2 shows the results of students' self-reported social and emotional well-being at timepoint one. The highest scoring areas included strengths in empathy (average = 0.52), emotion control (average = 0.35), trust (average = 0.29) and adult relationships (average = 0.28). School bonding also showed up as a strength in timepoint one (average = 0.22). The lowest scoring areas at timepoint one included assertiveness (average = 0.15), reflection (average = 0.05), learning interest (average = 0.06), critical thinking (average = 0.08) and peer relationships (average = 0.08).

Table 2. Longitudinal Data Baseline at Timepoint 1 (N=89)

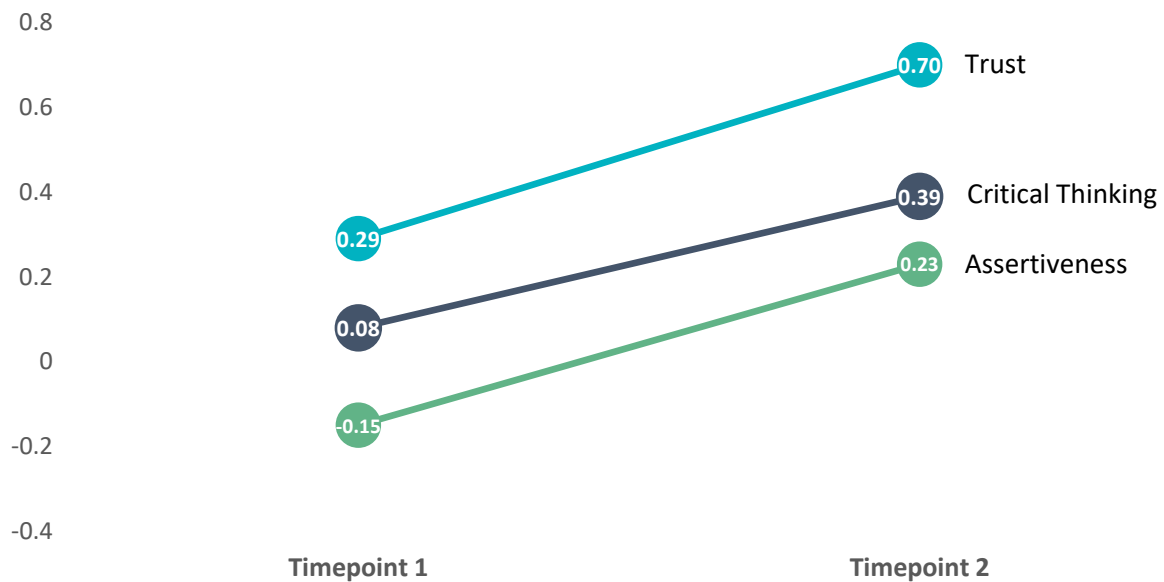
Item	Mean Score	Range	Std Dev
Action Orientation	0.14	4.41	1.06
Assertiveness	-0.15	3.74	0.91
Emotion Control	0.35	3.57	0.93
Empathy	0.52	4.12	0.82
Optimism	0.13	4.63	0.96
Reflection	0.05	4.17	0.84
Trust	0.29	3.88	0.90
Adult Relationships	0.28	4.14	0.82
Peer Relationships	0.08	3.98	1.01
Academic Motivation	0.17	3.68	0.84
Learning Interest	0.06	3.54	0.91
Critical Thinking	0.08	3.67	0.84
Perseverance	0.09	3.20	0.85
School Bonding	0.22	3.86	0.83

We subsequently analyzed the data to explore growth of Trekkers participants over time while still participating in the program by comparing participants' HSA scores at two different timepoints using a paired t-test (Appendix B, Table 2), followed by a Wilcoxon signed rank test (Appendix B, Table 3).⁴ Note for timepoint two, the average age was 17.2 (ranging from 16 to 18.4), and most students were in 12th grade (82%).

⁴ A Wilcoxon signed-rank test was used to test the data that did not meet the standard of normal distribution for a paired t-test.

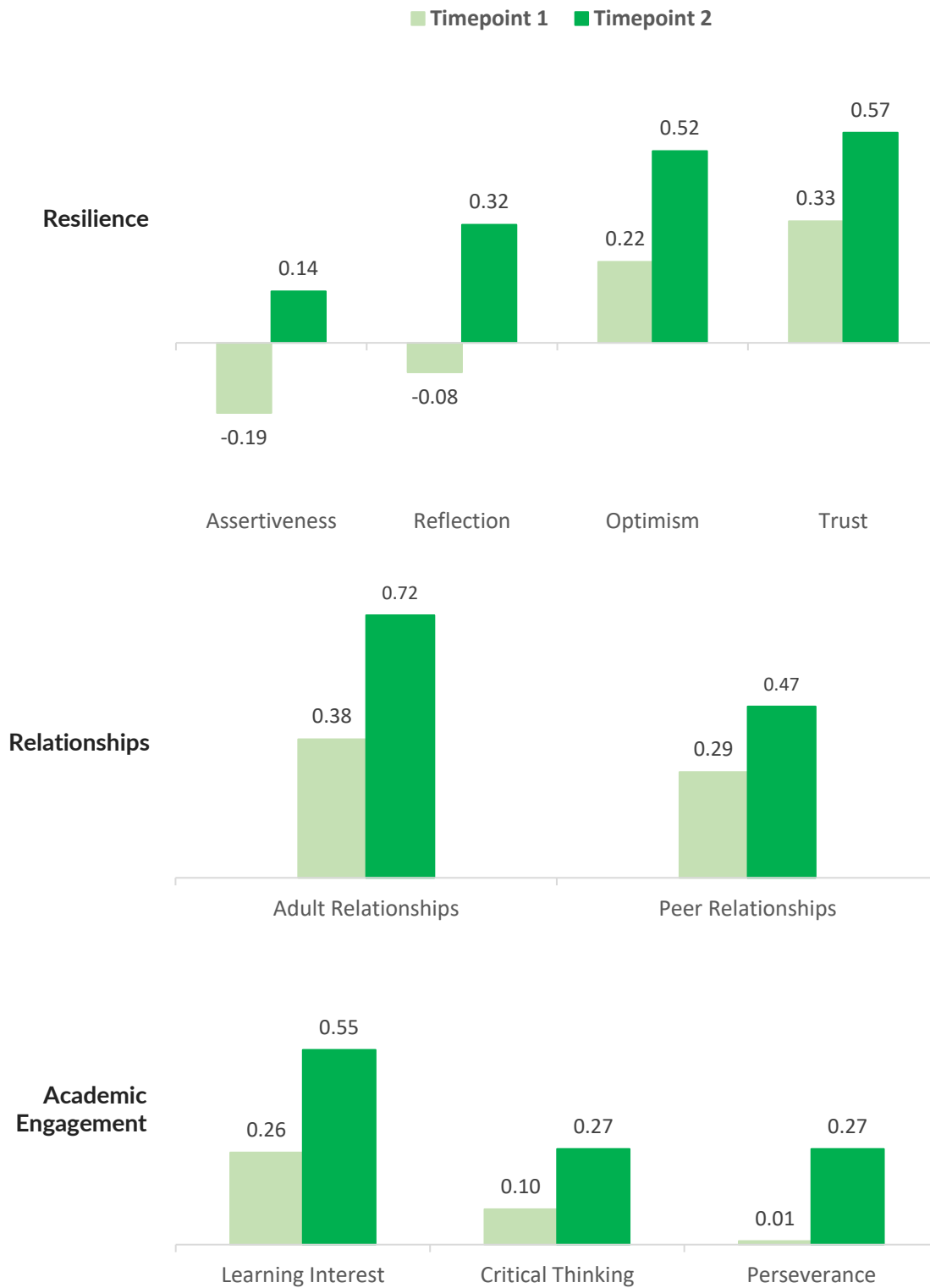
While a number of results represented statistically significant change, three variables stood out in this analysis as being statistically significant, void of outliers, and normally distributed (meaning the observed changes are the most reliable): trust, assertiveness, and critical thinking. Figure 2 shows that trust had the greatest increase between the first timepoint to the second timepoint (0.29 compared with 0.70), followed by assertiveness, which went from being a challenge at timepoint one to a strength at timepoint two (-0.15 compared with 0.23). Finally, critical thinking also improved over time, with an average score of 0.08 at timepoint one compared with an average of 0.39 at timepoint two.

Figure 2. Average Scores for Trekkers Participants Over Time (N = 89)



The Wilcoxon signed-rank test revealed that even in instances when the data were not normally distributed, the observed improvements between the two timepoints were statistically significant. The following Figure 3 shows the results between the first and second timepoints and highlights that the median scores for Trekkers participants in timepoint two which were significantly higher than the median scores in timepoint one for the following items: assertiveness, reflection, optimism, trust, adult relationship, peer relationships, learning interest, critical thinking and perseverance. These results further support the conclusion that many social-emotional characteristics consistently improved for Trekkers participants over the time they were involved with the program.

Figure 3. Median Scores for Trekkers Participants Over Time (N = 89)





Academic Engagement

Trekkers participants performed better in school than the average student and were more likely to enroll in post-secondary education when compared to their peers. These results were statistically significant and suggest that participation in Trekkers improves academic engagement.

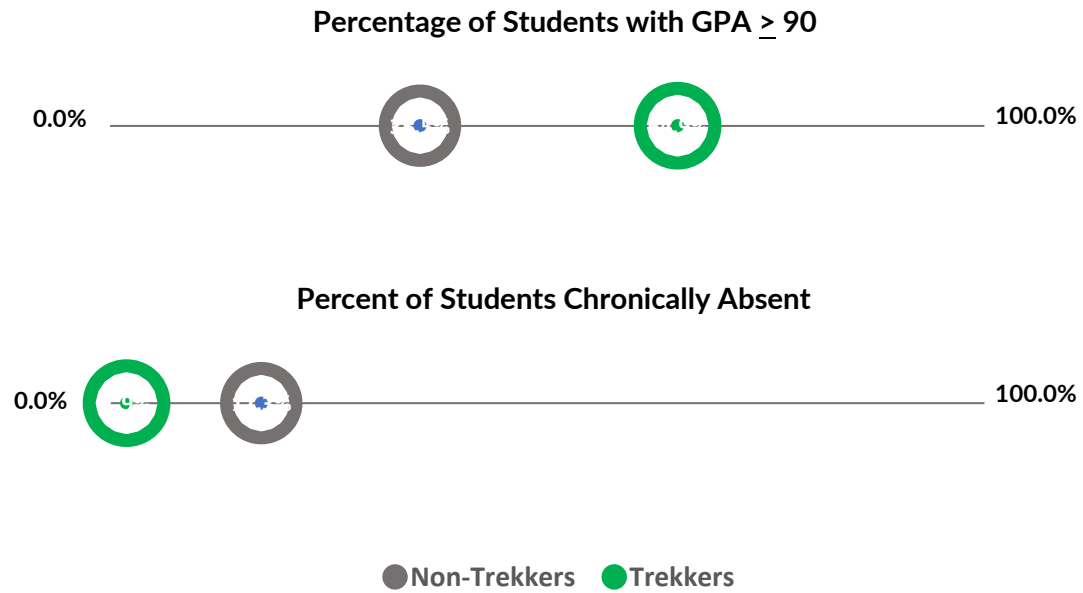
ATTENDANCE AND ACHIEVEMENT

A group of 102 Trekkers participants were matched to their school records, and then compared against all students at Oceanside High School. A Chi-Square Goodness of Fit test was run to examine whether Trekkers participants had lower absence rates and higher GPAs than their peers. Figure 4 shows these findings, and a full table of results, including grade breakdowns, can be found in Appendix B, Table 4.

Chronic absence is defined as missing at least 20% of the school year. Overall, 17% of non-Trekkers students were chronically absent throughout their high school career. However, for students who participated in Trekkers, their chronic absence rate was 2%, a statistically significant difference. Moreover, Trekkers participants consistently had lower rates of chronic absence than their non-participating peers and no matter which high school grade levels were compared this pattern was present and statistically significant.

Our analysis comparing the final GPA of Trekkers participants to their peers yielded similar results. While 35% of 12th grade Oceanside High School students had a GPA of 90 or above, 65% of 12th grade Trekkers participants had a GPA of 90 or greater, again a statistically significant difference.

Figure 4. Overall Academic Engagement of Trekkers Participants Compared to Peers (N = 102)



COLLEGE ENROLLMENT AND PERSISTENCE

As shown in Table 5, of the 123 Trekkers participants who were included in this portion of the study, the majority (77%) enrolled in post-secondary education at some point. Table 5 also shows the persistence (i.e., return to college for the next term) and degree attainment for those 95 students who initiated post-secondary education. Persistence is an important benchmark that indicates increased likelihood of returning and completing a degree (Krivoshey, 2014). Among the Trekkers' sample, 75% persisted from the first to second semester and 79% persisted to the following year. Of the Trekkers participants in our study, 64 had sufficient time elapse from initial post-secondary enrollment to expect degree attainment; by 2022, 66% had attained a degree.

Table 5. Post-secondary Engagement

	N	%
Initiation and Persistence		
Total	123	
Enrolled	95	77%
Persisted to 2 nd semester	79	75%
Persisted to 2 nd year	84	79%
Graduation		
Time to Graduate	64	
6-year Graduation	39	66%

What Institutions Do Trekkers Attend?

Trekkers participants enrolled in a wide range of institutions. Most enrolled in 4-year public institutions (46%), followed by a 4-year private institutions (38%), and a 2-year public institutions (16%).

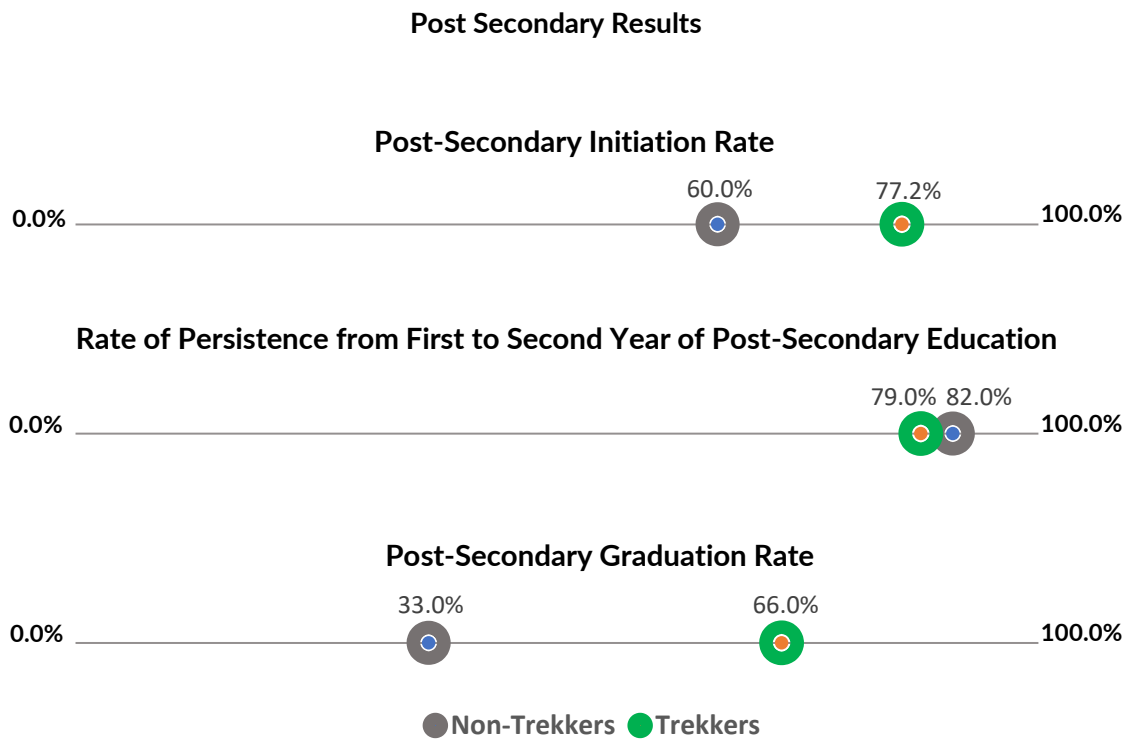
Three-quarters (75%) enrolled in post-secondary institutions in Maine; the remainder tended to enroll in institutions located in New England or New York. Only a handful (5%) went further afield. Similarly, 25% transferred to another institution at least once over the course of their educational pathway; of those, two-thirds transferred from a 2-year to a 4-year institution.

Trekkers' participants who graduated pursued a wide range of fields, including sociology, engineering/robotics, medicine/health, psychology, communications/journalism, marketing/business, justice, science, and education.

Comparison to Peers

Based on the aggregate NSC data reports for Oceanside High School, we have an expected rate of post-secondary enrollment if we assume Trekkers students are comparable to their peers, which is supported by the randomization built into their program acceptance process. Thus, we can compare the expected outcomes to what we observe in our data and test whether the difference is significant. The results of this analysis are found in Figure 5 below; complete results can be found in Appendix B, Table 5.

Figure 5. Academic Engagement for Trekkers Participants in Comparison to Peers:



The aggregate data reports for Oceanside High School show a consistent rate of 60% post-secondary enrollment on average. Thus, we would expect that approximately 60% of Trekkers students would enroll in some form of post-secondary education within 1-2 years of graduating from high school. However, as shown by Figure 5, we found that Trekkers students enrolled at a rate of 77%, a statistically significant difference.

Once Trekkers participants were enrolled in post-secondary education, however, they showed little difference from their peers in terms of persistence. For example, an average of 82% of Oceanside students who enrolled in post-secondary education continued from their first to second year, whereas 79% of Trekkers students continued from their first to second year, which was not statistically significant. However, Trekkers participants nonetheless completed degrees at a higher rate than their peers. Our study showed that an average of 33% of Oceanside High School students graduated from a post-secondary education within 4-6 years, compared to 66% of Trekkers participants who had done so, and these results were statistically significant. This suggests that Trekkers has a great deal of success in helping its participants to enroll in post-secondary education and, while they may take time off, they are more likely to complete a degree compared to their peers in the longer term.



Conclusion and Implications

This study successfully explored the extent to which youth who participate in Trekkers are more likely to exhibit positive social-emotional strengths and academic success when compared with their peers. It also examined the growth of these social-emotional measures among Trekkers participants over time.

Implications for the Field

No matter how we examined social-emotional well-being, our findings consistently demonstrated that students who have been engaged with Trekkers exhibited strengths in factors related to resilience (notably, emotion control, empathy, reflection, optimism and trust) as well as adult and peer relationships. Similarly, Trekkers participants exhibited growth over time as related to their learning interest, critical thinking and perseverance. This growth was also evident when we compared their academic engagement and success to their peers in terms of attendance and final grades. Although school bonding, or having positive personal connections and a sense of belonging in one's school, was notably lower for Trekkers participants, the findings nonetheless showed that Trekkers strengthened participants' academic engagement. This increased level of academic engagement manifested in much higher rates of attendance, achievement, college initiation and degree completion when compared with their peers. These results establish strong evidence that Trekkers has a positive impact on the resilience and the future success of its participants, and are consistent with the vast body of research literature from the youth development field demonstrating how strong relationships with peers and safe, trusted adult mentors, alongside high levels of empathy, greatly improves academic and professional outcomes for young people (Bowers et al., 2015; Brezovsky & Silvernail, 2000; Donaldson, 2000; DuBois et al., 2011; Lerner et al., 2012; Pittman, Irby & Ferber, 2001; Miller, 2018).

The implications of these results are even more profound in the post-COVID era, in which we see skyrocketing mental health needs among youth, coupled with ever-increasing social media usage and online modalities for school and work. Our study provides evidence for policymakers and practitioners working in this area to chart a course forward based on supporting long-term youth resilience building efforts such as Trekkers to successfully promote youth academic and career success.

Implications for Future Research

There were some areas we could not explore or answer with our study, either due to data inconsistencies or simply the research questions being posed. For example, we were unable to draw strong conclusions about which social-emotional factors may have played the greatest role on subsequent outcomes; this was in large part due to the irregularities of data collected in early years and small numbers. Going forward, having a robust dataset of social-emotional indicators coupled with academic outcomes such as post-secondary enrollment, persistence and graduation, could lend itself to even more precise conclusions about which program components contribute to long-term success among Trekkers participants. Similarly, it is important to acknowledge the impact that the COVID-19 pandemic may have had on measures of optimism and school bonding among some students, especially given a general disconnect from school and normal adolescent activities such as sports and other extracurriculars, which moved to remote, online formats for two years of the measurement period. Future exploration could likely reveal that Trekkers has a positive impact on those areas of well-being in addition the ones already found through this study.

We were also unable to look at specific programmatic factors that may contribute to student success. One programmatic component that could not be explored with this study was how disconnection from phones, technology and social media use may also have led to some of these positive effects, especially in relationships. More research should be done to confirm this connection. Another component that we could not explore were the outcomes among applicants who applied but were not accepted to the program through the lottery system. Designing a research study to track outcomes among those students would strengthen our body of evidence. Each of these research efforts would be extremely worthwhile given the promising nature of our findings.



Looking Ahead

We applaud the Trekkers program for engaging in a rigorous evaluation study, and we support their efforts to deepen our collective understanding of their work. The findings of this study highlight several promising results that stem from program participation, notably in terms of building resilience and relationships, and the positive outcomes that youth experience subsequently in terms of academic success. In the coming years, Trekkers should explore ways they can collaborate with schools to enhance participants' school bonding, learning interest and connection. Additionally, Trekkers may want to consider expanding their programming beyond high school to improve post-secondary degree attainment rates. Lastly, as more youth development programs in Maine take up the Trekkers approach, we urge Trekkers to continue gathering and reviewing data related to impact, expand their understanding of career successes (that is, following students who do not initiate post-secondary education), and to delve further into the effects of specific program components on the young people they serve through both qualitative and quantitative means.

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Appendix A: Holistic Student Assessment Information

The Holistic Student Assessment (HSA) is designed to assess students' social-emotional development across 14 constructs that group into 3 categories of life skills: Resilience, Relationships and Learning and School Engagement. It consists of 61 questions on which students self-report using a 4-point Likert scale ranging from "Not at all" to "Almost Always." Their responses are averaged across all items in the subscale to determine whether the scale represents a strength, a challenge, or if it is considered "average" (that is, typical skill development for the child's age).

Resilience

Action Orientation: Engagement in physical and hands-on activities.

Emotional Control: Self-regulation of distress and management of anger.

Assertiveness: Confidence in putting oneself forward, advancing personal beliefs, wishes or thoughts, and in standing up for what one believes.

Trust: Perception of other people as helpful and trustworthy.

Empathy: Recognition of other's feelings and experiences.

Reflection: Inner thought processes and self-awareness, and internal responsiveness toward broader societal issues.

Optimism: Enthusiasm for and hopefulness about one's life.

Relationships

Relationship with Peers: Positive and supportive social connections with friends and classmates.

Relationship with Adults: Positive connections and attitudes toward interactions with adults.

Learning and School Engagement

Learning Interest: Desire to learn and acquire new knowledge.

Critical Thinking: Examination of information, exploration of ideas, and independent thought.

Perseverance: Persistence in work and problem solving despite obstacles.

Academic Motivation: Incentive to succeed in school, without necessarily including general interest in learning.

School Bonding: Positive personal connections and the sense of belonging in one's school.

More information can be found at: <https://www.pearinc.org/holistic-student-assessment>

Appendix B: Complete Statistical Results

Table X. Average Score of Strengths and Challenges for 9th and 10th Grade Trekkers Participants vs Non-Trekkers Students: Results of Independent Samples T-Test

Item	Trekkers (N=22)		Comparison (N=22)		t-value	Significance (p-value)
	Mean	Std Dev	Mean	Std Dev		
Strengths						
Action Orientation	0.32	0.48	0.18	0.40	1.03	0.15
Assertiveness	0.32	0.48	0.18	0.40	1.03	0.15
Emotional Control**	0.18	0.40	0.05	0.21	1.43	0.08
Empathy	0.18	0.40	0.18	0.40	0.00	0.50
Trust	0.09	0.29	0.18	0.40	-0.87	0.20
Reflection	0.14	0.35	0.05	0.21	1.04	0.15
Optimism	0.18	0.40	0.09	0.29	0.87	0.20
Adult Relationships	0.18	0.40	0.18	0.40	0.00	0.50
Peer Relationships	0.23	0.43	0.14	0.35	0.77	0.22
Learning Interest	0.18	0.40	0.09	0.29	0.87	0.20
Critical Thinking	0.09	0.29	0.05	0.21	0.59	0.28
Perseverance	0.18	0.40	0.14	0.35	0.40	0.34
Academic Motivation	0.05	0.21	0.09	0.29	-0.59	0.28
School Bonding*	0.00	0.00	0.18	0.40	-2.16	0.02
Challenges						
Action Orientation	-0.14	0.35	-0.18	0.40	0.40	0.34
Assertiveness	-0.18	0.40	-0.23	0.43	0.37	0.36
Emotional Control	-0.14	0.35	-0.14	0.35	0.00	0.50
Empathy*	-0.05	0.21	-0.27	0.46	2.12	0.02
Trust	-0.09	0.29	-0.14	0.35	0.47	0.32
Reflection**	-0.09	0.29	-0.27	0.46	1.57	0.06
Optimism	-0.14	0.35	-0.27	0.46	1.11	0.14
Adult Relationships*	-0.09	0.29	-0.32	0.48	1.90	0.03
Peer Relationships*	0.00	0.00	-0.14	0.35	1.82	0.04
Learning Interest	-0.27	0.46	-0.27	0.46	0.00	0.50
Critical Thinking	-0.18	0.40	-0.18	0.40	0.00	0.50
Perseverance	-0.27	0.46	-0.32	0.48	0.32	0.37
Academic Motivation	-0.23	0.43	-0.36	0.49	0.98	0.17
School Bonding*	-0.23	0.43	-0.05	0.21	-1.78	0.04

*Statistically significant at the $p \leq 0.05$ level.

**Statistically significant at the $p \leq 0.10$ level.

Note: A statistically significant result indicates that the observed difference between the Oceanside High School sample and the Trekkers participant sample is greater than we might expect by chance alone.

Table 2. Average Subscale Scores for Trekkers Participants Over Time: Results of Paired T-Test (N=89)

Item	Mean		DF	t-value	Significance (p-value)
	T1	T2			
Action Orientation	0.14	0.13	88	0.06	0.949
Assertiveness*	-0.15	0.23	88	-3.95	<0.001
Empathy	0.52	0.66	88	-1.59	0.116
Emotion Control**	0.35	0.52	88	-1.89	0.062
Reflection*	0.05	0.27	88	-2.16	0.033
Optimism*	0.13	0.49	88	-3.65	<0.001
Trust*	0.29	0.70	88	-3.77	<0.001
Adult Relationships*	0.28	0.64	88	-3.75	<0.001
Peer Relationships*	0.08	0.48	88	-3.36	0.001
Academic Motivation	0.17	0.20	88	-0.26	0.793
Learning Interest*	0.06	0.41	88	-3.42	<0.001
Critical Thinking*	0.08	0.40	88	-3.54	<0.001
Perseverance*	0.09	0.40	88	-3.36	0.001
School Bonding**	0.22	0.41	88	-1.96	0.054

*Statistically significant increase between T1 and T2 at the $p \leq 0.05$ level.

**Statistically significant increase between T1 and T2 at the $p \leq 0.10$ level.

Note: A statistically significant result indicates that the observed difference between Trekkers participants at Timepoint 1 and Timepoint 2 is greater than we might expect by chance alone.

Table 3. Figure X. Median Subscale Scores for Trekkers Participants Over Time: Results of Wilcoxon Ranked-Sign Test (N = 89)

Item	Timepoint 1		Timepoint 2		Wilcoxon Signed Rank Test	
	Median	SD	Median	SD	Z-Score	Probability
Action Orientation	0.34	1.06	0.39	1.05	0.095	0.924
Assertiveness*	-0.19	0.91	0.14	0.94	3.823	<0.001
Empathy	0.73	0.82	0.93	0.72	1.062	0.288
Emotion Control	0.36	0.93	0.63	0.83	1.484	0.138
Reflection*	-0.08	0.84	0.32	0.96	2.098	0.036
Optimism*	0.22	0.96	0.52	0.85	3.301	<0.001
Trust*	0.33	0.90	0.57	0.95	3.191	0.001
Adult Relationships*	0.38	0.82	0.72	0.89	3.398	<0.001
Peer Relationships*	0.29	1.01	0.47	0.81	3.609	<0.001
Academic Motivation	0.37	0.84	0.25	0.90	0.592	0.554
Learning Interest*	0.26	0.91	0.55	0.87	3.232	0.001
Critical Thinking*	0.10	0.84	0.27	0.86	3.226	0.001
Perseverance*	0.01	0.85	0.27	0.80	2.891	0.004
School Bonding**	0.10	0.83	0.23	0.87	1.717	0.086

*Statistically significant increase between T1 and T2 at the $p \leq 0.05$ level.

**Statistically significant increase between T1 and T2 at the $p \leq 0.10$ level.

Note: A statistically significant result indicates that the observed difference between Trekkers participants at Timepoint 1 and Timepoint 2 is greater than we might expect by chance alone.

Table 4. Academic Engagement of Trekkers Participants Compared to Peers: Percent of Students Chronically Absent (>20% absent) and Percent of Students with a 12th Grade GPA of 90 or Above

Grade Level	Trekkers	Non-Trekkers	N	X ₂	DF	Significance (p-value)
9th Grade*	3.0%	14.8%	67	7.36	1	0.007*
10th Grade*	7.9%	18.6%	63	4.69	1	0.030*
11th Grade*	1.5%	18.4%	69	13.25	1	<0.001*
12th Grade*	2.6%	16.4%	77	10.71	1	0.001*
Full High School Career*	1.9%	17.3%	104	17.17	1	<0.001*
12th Grade GPA*	64.9%	35.5%	77	29.18	1	<0.001*

*Statistically significant at the $p \leq 0.05$ level.

Note: A statistically significant result indicates that the observed difference between the Oceanside High School population and the Trekkers participants is greater than we might expect by chance alone.

Table 5. Academic Engagement for Trekkers Participants in Comparison to Peers: Post-secondary Initiation, Persistence and Graduation

College Engagement	Trekkers	Non-Trekkers	N	X ₂	DF	Significance (p-value)
Initiation*	77.2%	60.0%	95	15.24	1	0.000
2 nd Year Persistence	79.0%	82.0%	84	0.55	1	0.460
6-Year Graduation*	66.0%	33.0%	39	29.24	1	<0.001

*Statistically significant at the $p \leq 0.05$ level.

Note: A statistically significant result indicates that the observed difference between the Oceanside High School population and the Trekkers participants is greater than we might expect by chance alone.