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The role and importance of program quality in outdoor adventure programs for youth: Examining program quality indicators as predictors of outcome achievement among NOLS participants

Rachel Collins

Department of Parks, Recreation & Tourism

University of Utah

1901 E. South Campus Drive

Salt Lake City, UT 84105

rachel.collins@utah.edu

978-979-8896

Jim Sibthorp

University of Utah

John Gookin

National Outdoor Leadership School

Scott Schumann
University of Utah

Abstract

Youth outdoor and adventure programs are increasingly being expected to provide evidence that their programs are effective in achieving outcomes. While this is an important goal, participant outcomes are difficult to program for as they are influenced by many variables including the active role of the participant, the leader, the social and physical environments, and a myriad of contextual variables. However, program quality manifests at the point of service, and thus remains malleable by the program. Results of this study highlight the importance of program quality indicators on participant development and more specifically, which elements of program quality are most predictive of program outcomes.

Keywords: youth programs, course quality, outdoor adventure programs

Introduction

“As the youth development and after-school fields expand and mature, practitioners, policy makers and researchers are increasingly rallying around the importance of assessing and improving program quality.” Wilson-Ahlstrom, Yohalem, & Pittman (p. 7, 2007). *Building Quality Improvement Systems: Lessons from Three Emerging Efforts in the Youth-Serving Sector*.

Youth outdoor and adventure programs are increasingly being expected to focus on elements of their programs that they can directly control (Sibthorp, Paisley & Gookin, 2007). Recently, the literature in outdoor and adventure programs for youth has seen an ongoing effort to increase the research efforts around the benefits of these programs, and much of this research has been based on outcome achievement of the participants (see Hattie, Marsh, Neil & Richards, 1997). However, program outcomes can vary immensely from participant to participant. The achievement of outcomes by an individual can be the result of program design, staff interaction, curricular design, individual participant history, peer interactions, and a myriad of other factors that may or may not be relevant to that

participant at that time. During an outdoor adventure program, these factors interact in ways that can be beneficial and developmental for an individual, or they may interact in a way that is ineffective or even detrimental. Therefore, disentangling the sources that are truly affecting outcome achievement can be difficult. As a result, youth programs are moving to focus on elements of their programs that they can directly control, i.e. course quality.

Literature and research offers some guidance regarding quality indicators of experiences that typically are beneficial for youth participants. For example, The National Research Council recognizes essential program elements such as developmental frameworks, commitment to assessment of outcomes, trained staff, safety, structure, supportive relationships, opportunities for belonging, positive social norms, opportunities to make a difference and build skills, and integration with family, school, and community efforts (Eccles & Gootman, 2002). As this line of inquiry has evolved, different terms have been used, but developmental experiences for youth should be engaging, respectful, empowering, interactive, supportive, and safe (Smith & Akiva, 2008; Yohalem & Wilson-Ahlstrom, 2007). Specific to adventure and outdoor education, other elements are typically viewed as desirable program elements including reflection (e.g., Gass & Priest, 2006; Green, Kleiber, & Tarrant, 2000); feedback from instructors (e.g., Caulkins, 2006; Green et al., 2000; Schumann et al., 2009); relationships with leaders (e.g., Caulkins, 2006; Sibthorp et al., 2008), empowerment (e.g., McKenzie, 2000; Sibthorp et al., 2008), social support (e.g., Neill & Dias, 2002), and positive group dynamics (e.g., Ewert & McAvoy, 1999; McKenzie, 2003).

While many of these elements of program quality are influenced at the program and instructor levels, their direct influence on the participants is largely a matter of participant perception. A program may, for example, believe that it creates a respectful and emotional safe environment, but if a participant does not perceive respect or feel emotionally safe then it is difficult to realize benefits from the etic perspective of experience provision.

Therefore, the purpose of this study was to determine the importance of participant perceptions of program quality indicators on participant development. More specifically, this study addresses outdoor adventure youth programming at the National Outdoor Leadership School (NOLS) and how specific elements of program quality may be impacting the development of the school's outcomes of interest.

Literature Review

The Need for Quality Youth Programs

Millions of youth in the United States spend their time in non-school recreation activities which have the potential to promote and develop positive outcomes. Beth Miller (2003), author of *Critical Hours: After School Programs and Educational Success*: explains, "because young people spend only 20% of their time in school, how and where they spend the remaining 80% has profound implications for their well being and their future" (p. 2). How youth spend their time out of school (both during the school year as well as during school breaks), will have an impact on developmental, as well as educational, outcomes. Some research has even shown that without appropriate structure and supervision negative behaviors can develop in youth (Jacob & Leffgrin, 2003). Outdoor and adventure programmers have a unique opportunity to focus on "how" youth spend their time. With the advantage of understanding what program elements might promote growth, outdoor and adventure programmers can design and implement programs they are confident will result in their desired outcomes.

Do Youth Programs Work?

When outdoor and adventure programs design program experience elements with quality in mind youth can grow in positive directions. Professional outdoor and adventure programmers are well versed in the intricacies of designing programs with various goals in mind for their youth participants. These goals might include increased self-confidence, self-efficacy, social skills, self-awareness, academic interest, or a propensity to make healthy choices. Research focused on the effectiveness of youth programming indicates that youth adventure programs are able to achieve many positive outcomes including: social and emotional development (e.g. Ewert & McAvoy, 2000), academic enrichment (e.g., Birmingham, Pechman, Russell, & Mielke, 2005; Russell et al., 2006), self-concept development, interpersonal awareness, and environmental awareness (Hattie, Marsh, Neill & Richards, 1997). It could be said that the field of youth adventure programming has developed an understanding of what outcomes result from participation in youth programs. But as this understanding has been developed another question has grown from it: "What is it that makes them work?"

A Focus on the Processes Rather than the Outcomes

The Committee on Community-level Programs for Youth, formed by the National Research Council and Institute of Medicine, published a two-year project with the intent of synthesizing the "current science of adolescent health and development with research findings related to program design, implementation, and evaluation of community programs for youth" (p. ix, Eccles & Gootman, 2002). The authors examined peer reviewed empirical studies of youth in various settings such as families, schools, and community programs. Coupled with theory of adolescent development, eight features of positive developmental settings were identified. The features incorporate social or psychological aspects of the environment the child interacts with, rather than physical structures like a basketball court or gymnasium. The features include 1) physical and psychological safety, 2) appropriate structure, 3) supportive relationships, 4) opportunities to belong, 5) positive social norms, 6) support for efficacy and mattering, 7) opportunities for skill building and mastery, and 8) integration of family, school, and community efforts. In addition and support of these features, other researchers and authors have proposed similar structural characteristics which promote youth development in communities (i.e., Miller, 2003; Villarruel, Perkins, Borden, & Keith, 2003) and in outdoor and adventure settings. Most of them are variations on the same eight quality factors.

Participant Level Elements of Course Quality

Related literature suggests that one of the primary goals of adventure and outdoor programs is to afford experiences in such a manner where risk is managed and students are provided with a *safe* course environment in which to learn (Martin, Cashel, Wagstaff & Breunig, 2006). True safety is never a guarantee in outdoor adventure programs, therefore, the management of risk becomes a priority for the leaders of courses of this nature (Hunt, 1990), however, youth participants who feel that they are learning in safe and supportive environments report higher levels of achievement (Johnson, 2006).

Additionally, outdoor adventure programs should ensure *individual respect* for participants in their programs. Studies have shown that this social support can be beneficial in the development of individual participant outcomes (e.g., Neill & Dias, 2002). Other studies in youth development have shown that positive course outcomes are related to those programs that facilitate an emotionally supportive peer environment and provide emotionally supportive instructors (Eccles & Gootman, 2002; Goss, Wimer & Little, 2008). Additionally, a meta-analysis on youth program quality components showed it's important for students to feel they have an active role in the decision making process (Goss, Wimer & Little, 2008), and thus *personal empowerment* is noted as a critical course quality for youth

programs. Specifically in adventure and outdoor programming, there is general support in the adventure education literature that educational models which are participant driven will be more successful at teaching skills and dispositions (Hyde-Hills, 1998; Kimball, 1991; Wilson, 1995). Previous studies have shown that participants who felt they had an active part in the decision making process, and were empowered to make such decisions also perceived greater developmental gains (McKenzie, 2000; Sibthorp, 2003; Sibthorp & Arthur-Banning, 2004; Sibthorp et al., 2007).

Adventure programs that have educational components also try to develop program elements so that the educational experiences provide *engagement* for the participants. Studies have shown that increased time on task increases developmental goals (Astin, 1977; Pascarella & Terenzini, 1991) and participants who are more engaged in the learning process are more likely to commit the time and attention to the learning process. Additionally, researchers articulate that *reflection* on an adventure course is a critical piece of the course experience as it has the potential to facilitate deeper learning (Gass & Priest, 2006; Green et al., 2000). Participants identify that time for reflection is critical to their growth (Gass, Garvey & Sugarman, 2003) and that there is value of down time on a course (Ewert et al, 2000).

Adventure programs that aim to develop outcomes, also acknowledge that feedback can be a powerful catalyst to the achievement of outcomes (Schumann & Millard, 2012). More specifically, *feedback from instructors* can serve as a powerful developmental tool (e.g., Caulkins, 2006; Green et al., 2000; Schumann et al., 2009) and it is needed for learning, as this type of feedback aids in the process of making connections (Johnson, 2006). In addition, *feedback from students (or peers)*, can be a strong influence on participant behavior (Gass, Garvey & Sugarman, 2003). Learning environments where participants are encouraged to co-construct knowledge and share experiences are said to lead to developmental gains (Baxter Magolda, 2002), and participants identify that watching other participants carry out a task helps them learn to complete the task themselves (Ewert et al, 2000).

As peers and instructors practice good feedback techniques, participants may find themselves in a position where they are presented with the *presence of role models*. Research on outcomes in adventure education shows us that participants prefer to feel like they matter to an instructor (Sibthorp, Paisley & Gookin, 2007) and those participants who felt like they had a quality relationship with an adult also felt they had increased program performance (O'Brien, 1990). Therefore staff modeling can be an important component of participant learning (Ewert et al, 2000) as it facilitates relationships with instructors, who as role models play a part in achieving course outcomes (Caulkins, 2006; McKenzie, 2003; Sibthorp et al., 2007).

The overall *group functioning* will play a role in the development of outcomes. Previous studies have found that individual participants benefit from enhanced group functioning in Outward Bound (Ewert & Heywood, 1991). Also, studies show that if group dynamics are positive, they can impact a variety of outcomes in group expeditions (Ewert & McAvoy, 2000; McKenzie, 2003). The role of group dynamics was shown to be critical in the development of both course objectives and individual learning on Outward Bound courses (Estes, 1994; McFee, 1993). On the whole, the literature states that positive social communities contribute to learning (Tinto, 1987; Wolf-Wendel & Ruel, 1999).

Experience Duration

To this point, all the course elements discussed have been parts of outdoor and adventure programs that are infused into the structure of a course or experience. However, it is also important to recognize that the structure of the course itself also can play a role in participant development (Gross, Wimer & Little, 2008). Previous research into the overall structure of the course (as opposed to specific program elements listed above which are implemented at the student level) have shown that the duration of the experience is related to program outcomes (Paisley, et al, 2008; Sibthorp, Paisley & Gookin, 2007). More specifically, longer programs have been shown to lead to greater learning in both outdoor adventure educational courses as well as therapeutic trips (Cason & Gillis, 1994; Hattie et al, 1997; Hobbs & Spencer, 2002; Russell; 2003). This is akin to dosage of an effect and is often considered an advantageous characteristic of adventure programs, especially outdoor expeditions for youth (Sibthorp & Morgan, 2011).

The Role of Course Quality

The outcomes achieved by successful programs should not occur by accident, they should be intentional efforts in program design and implementation. Individual programs which had a specific curricular focus on academics were more likely to achieve academic outcomes and those with an emphasis on promoting personal and social skills were more likely to improve self-esteem and self-confidence (Goss, Wimer & Little, 2008). These findings intuitively make sense; if a coordinator has a goal, he or she must design a program with that goal in mind. Thus, if the goal of the program is to promote youth development then the design should include empirically supported elements of program quality.

The fact that students attend outdoor and adventure programs itself does not lead to the achievement of positive outcomes, rather, it is "how" youth spend their time that will critically determine their ability to learn and grow in these environments. If programs aim to teach a set of defined objectives, then post course assessment of this achievement is not enough. Rather, programmers in this field have the unique opportunity to provide co-curricular experiences that support learning objectives, by intentionally designing these experiences from the point of service to create the best environment possible for outcome achievement. In order to understand the creation of these intentional learning environments, outdoor adventure practitioners have to understand how course quality elements (the role of the instructor, the peer group, etc) interact and influence the individual's outcome achievement. Thus, an exploration of how course quality is addressed in the adventure programming and youth development literature can lend some insight into how these course elements provide critical value to adventure courses. More specifically, this study draws on the most predominantly articulated course quality elements of outdoor and adventure programs: safety, individual respect, personal empowerment, engagement, reflection, feedback from instructors, feedback from participants, presence of role models, , and group functioning. In addition, as program dosage or duration is widely considered important it was included in the empirical models.

Purpose of the Study

While some of the elements of program quality are determined at the program level and cannot be reasonably assessed by participants, participants are able to assess their personal perceptions of relevant quality indicators. As they operate at the point of service, the real influence of program quality elements is at the level of participant perception. For example, if a programmer believes that their program provides time for reflective activities, but participants cannot identify this time and practice of reflection, then the related benefits may not be realized. Therefore this study aims to understand the role

and importance of participant perceptions of course quality indicators. Specifically, we selected nine indicators of program quality from the adventure and youth course quality literature review and course duration to examine in relation to self-reported growth in Leadership and Outdoor Skills, two outcomes central to the National Outdoor Leadership School (NOLS) where this study was completed. All quality indicators were hypothesized to be positively related to outcome achievement. Longer course were hypothesized to be more developmental than shorter courses.

Methods

Sample

For this study, the population of “youth” was restricted to participants between the ages of 13 and 25 years old, following the broader definitions of “youth” currently applied by many federal and state agencies. While some consider adolescence to end at 18, recent developments in the collegiate participant development literature leads many to believe that there are characteristics of the emerging adult population (as defined by Arnett & Tanner, 2006) which are equivalent to those characteristics that define the broader category of “youth” (Tanner, Arnett, & Lies, 2008). This sample includes youth from a variety of different course seasons (winter courses, summer courses, and shoulder season courses), locations (i.e. Rocky Mountains, Southwest, Alaska, New Zealand and the Pacific Northwest) as well as course types (i.e. backpacking, sea kayaking, canoeing, mountaineering, winter, etc). The data for this study were collected via the NOLS Course Quality Survey (CQS) between August 2009 and July of 2010 and included a total of 1,537 students from 181 courses.

Instrument

The CQS was given to each participant at the conclusion of his/her course and measures a variety of different constructs. The CQS has been used in a number of past studies and has shown good evidence of utility, validity and internal consistency for the primary outcomes of interest in this study (Paisley et al., 2008; Shooter, Sibthorp, & Tarrant, 2011).

For this study, researchers were primarily concerned with the items on the CQS that are theoretically constructed to tap course quality and items that were representative of outcomes primary to the NOLS experience. The nine course quality predictors that were included in this study were measured using a seven-point Likert-type scale anchored by “Strongly Disagree” and “Strongly Agree”.

The course quality indicator of *safety* was designed to address whether or not participants felt that safety was a priority in the course. This indicator was measured using a single item in the course quality indicators scale.

The course quality indicator of *individual respect* was designed to measure how well participants felt that they were accepted into the group and felt that their contributions to the group were valued. This indicator was measured using a single item in the course quality indicators scale on the CQS.

The course quality indicator of *engagement* was included to measure how engaging participants found the educational experiences that were a part of the course they participated in. This indicator was measured using a single item in the course quality indicators scale on the CQS.

The course quality indicator of *reflection* was designed to measure whether or not participants felt that there was enough time during their course set aside to engage in reflection about the learning and course experiences. This indicator was measured using a single item in the course quality indicators scale on the CQS.

The course quality indicator of *feedback from instructors* was designed to measure whether or not participants felt that they were receiving both useful and frequent feedback from the instructors during their course. This indicator was measured using a single item in the course quality indicators scale on the CQS.

The course quality indicator of *feedback from participants* was designed to measure whether or not participants felt that they were receiving both useful and frequent feedback from the other participants (peers) during their course. This indicator was measured using a single item in the course quality indicators scale on the CQS.

The course quality indicator of *presence of role models* was designed to measure whether or not participants felt that there were people on their course who could be viewed as role models. This question was intended to address whether or not there were people on the course who participants felt that they respected and admired. This indicator was measured using a single item in the course quality indicators scale on the CQS.

The course quality indicator of *personal empowerment* was designed to measure the degree to which participants felt that each participant, as an individual, was an empowered member of the course. This course quality indicator included participants feeling that they contributed to successes in the group, that they held meaningful responsibilities and that they made important decisions. This indicator was measured using a three-item subscale in the course quality indicators scale on the CQS. These items showed good internal consistency ($\alpha = .89$).

The course quality indicator of *group functioning* was designed to measure the degree to which participants felt that the group functioned well as unit. This indicator was designed to measure both how productive the individual felt the group was as well as how well the individual felt they interacted with other individuals on the course. This indicator was measured using a two-item subscale in the course quality indicators scale on the CQS. These two items showed adequate internal consistency ($\alpha = .71$).

Table 1: Elements of Course Quality and Questions

Course Quality	Question
Safety	"Safety was a high priority on this course"
Individual Respect	"My point of view and life experiences were appreciated by others on my course."
Engagement	"The NOLS model was engaging, not boring"
Reflection	"I had ample opportunities to reflect on what I was learning during my NOLS course."
Feedback Instructors	from "I received a lot useful feedback from my instructors during my NOLS course."
Feedback Participants	from "I received a lot of useful feedback from my fellow participants on this course."
Presence of Role Models	"There were role models on my course who I respected and admired."
Personal Empowerment	"I contributed to my group's successes." "I had important responsibilities on this course." "I made important decisions on this course."
Group Functioning	"Our group worked well together even when instructors were absent." "I got along well with everyone on this course."

The outcome variables for this study were leadership skills and outdoor skills. Leadership skills are defined by NOLS as those skills that are representative of responsibility, initiative, and decision making (Gookin, 2003; Gookin & Leech, 2009; Sibthorp, Paisley & Gookin, 2007). Leadership skills on the CQS are measured using a seven-item subscale that showed good internal consistency with a Cronbach's alpha of .93. Outdoor skills at NOLS are defined as those skills that are traditionally seen as technical skills or those competencies needed for backcountry travel (Sibthorp, Paisley & Gookin, 2007). Outdoor skills on the CQS are measured using a 4 item subscale that showed good internal consistency with a Cronbach's alpha of .89. Both of these subscales are based on the same likert-type scale as the predictor variables (anchored by "Strongly Disagree" and "Strongly Agree") and had separate but identical retrospective pretest and posttest scales. Retrospective pretests scales are intentionally used on the CQS so that participants can more accurately denote any learning or growth they might have achieved as a result of their NOLS course, given the potentially changing nature of measurement and item definitions (see Sibthorp, Paisley, Gookin, & Ward, 2007).

Analysis

In order to address differences by course type, multi-level modeling was used to analyze the data and account for the nested nature of the data. Hierarchical linear modeling (HLM 6.0) was used to analyze these data (Raudenbush, Bryk, Cheong, Congdon & Du Toit, 2004). In the model participant

level predictors were modeled at level 1 and course level predictors were modeled at level 2.

For this analysis, two parallel but separate models were generated including one for each outcome variable. Model 1 was generated for the outcome variable of outdoor skills. In this model individual participants' posttest scores on the Outdoor Skills scale were used as the outcome variable of interest. For Model 2, individual participants' posttest scores on the Leadership Skills subscale were used as the outcome variable of interest.

Level 1 for both models included covariates of age, gender, and retrospective pretest scores for the corresponding outcome variable (Outdoor skills in model 1 and Leadership skills in model 2). Predictors used at level 1 for both models were the nine course quality indicators from Table 1.

Level 2 for both models included course length or duration as an additional indicator for outcome achievement. Course lengths were defined as short (courses between 14 and 17 days in length), classic (courses between 21 and 35 days in length) and semester courses (courses 60+ days in length).

A model comparison approach was used, where an empty or null model was compared to a covariate model and finally to the model including the hypothesized predictors. Significant improvements in deviation scores ($p < .05$) indicated improved model fit. Coefficients significant at $p < .05$ were interpreted.

Results

Prior to the testing of the outcome models, basic cleaning and screening of the data was done. First, to ensure that the data accurately reflected a youth population, students under the age of 13 and over the age of 25 were screened out of the working data set. Of the remaining youth participants, 139 of those participants were unable to be matched to course groupings and were therefore not included in the analysis. Additionally, 22 students (1.4% of the sample) had scores that led the researchers to believe that they had reversed the scales (e.g., students reported positive remarks in the qualitative data yet consistently scored the course quality and learning outcomes as very low). In cleaning and screening data at the course level it was revealed that there were 12 course groups contained fewer than three students. These courses were not deemed large enough for course level modeling, as they would not have enough group variance to adequately contribute to the model, thus, they were removed before the final analysis.

The final sample included 1339 youth NOLS participants in 169 different course groups. The participants for this study were enrolled in courses from 12 different NOLS branch locations and were categorized in 62 different course types (e.g., Wind River Wilderness, Southwest Semester, Alaska Mountaineering, etc). Courses ranged from 14 to 135 days in length. Courses were categorized into groups of short ($n=20$ courses), classic ($n=100$ courses), or semester ($n=49$ courses) length courses. Participants were 65% male and had an average age of 18.6 years (range of ages was delimited to 13-25 years to ensure that only "youth" participants were included in the study). The researchers believe that this sample is representative of the typical NOLS youth participant based on NOLS course demographics and previous studies (e.g., Schumann et al. 2009; Sibthorp, Paisley & Gookin, 2007).

Table 2. Descriptive Statistics for Predictor Variables

	Mean	Standard Deviation
Safety	25.08	9.03
Individual Respect	19.23	12.11
Engagement	20.34	11.74
Reflection	18.52	12.64
Feedback from Instructors	20.80	11.74
Feedback from Participants	13.99	13.31
Presence of Role Models	22.09	11.41
Personal Empowerment	21.26	8.85
Group Function	18.86	11.46

*scales for predictor variables are scored on a -30 to 30 scale.

HLM General Findings

Consistent with previous work (Sibthorp, Paisley & Gookin, 2007), age was negatively related to outcomes (i.e. younger participants report lower levels of leadership and outdoor skills), and longer courses explained a significant amount of the course level (level 2) variance compared to shorter courses. The inclusion of the hypothesized predictors significantly improved model fit ($p < .01$) for both models. Course differences explained a significant ($p < .05$) amount of variance in both leadership and outdoor skills, and the addition of only the pretest as a covariate significantly improved both models ($p < .01$). When the nine hypothesized quality indicators were entered as level 1 predictors, difference in the 2 models emerged.

Model 1: Outdoor Skills

Model 1 was designed to assess the course quality indicators that most uniquely contribute to gains in outdoor skills as an outcome. In this model the course quality indicators of safety ($t=4.07$, $p<.001$), instructor feedback ($t=3.66$, $p<.001$), student feedback ($t=-1.96$, $p=.050$), presence of role models ($t=2.23$, $p=.026$), and personal empowerment ($t=8.84$, $p<.001$) all significantly predicted post course outcomes in outdoor skills. With one exception, the predictors were related as hypothesized, with increases in the quality indicators associated with greater outcome achievement. The negative and significant coefficient associate with participant feedback does not make sense given the positive and significant zero-order correlation between participant feedback and outdoor skill development. The only plausible explanation seems to be the mathematical artifact caused by a form of suppression termed net suppression by Cohen and Cohen (1983). Thus, while "significant", this finding does not warrant interpretation. Collectively, the set of included predictors explained 38% of the variance in Model 1. A summary of results for all predictors for Model 1 are listed in Table 3 (below).

Table 3. Model 1: Outdoor Skills

	Coefficient	Std. Err	T	p	df
Level 1					
Safety*	0.17	0.28	4.07	.000	1322
Individual Respect	0.01	0.02	0.63	.530	1322
Engagement	0.03	0.02	1.64	.100	1322
Reflection	0.02	0.02	1.15	.250	1322
Feedback from Instructors*	0.09	0.02	3.66	.000	1322
Feedback from Participants*	-0.04	0.02	-1.96	.050	1322
Presence of Role Models*	0.06	0.03	2.23	.026	1322
Personal Empowerment*	0.32	0.04	8.84	.000	1322
Group Function	0.02	0.02	0.97	.333	1322
Level 2					
Short Courses*	-1.31	0.64	-2.04	.042	166
Semester Courses*	1.56	0.46	3.36	.001	166

* significant predictors

Model 2: Leadership Skills

In the model for leadership skills, safety ($t=3.20$, $p=.002$), presence of role models ($t=2.37$, $p=.018$), and personal empowerment ($t=9.49$, $p<.001$) were all significant predictors of post course outcomes in leadership skills (similar to outdoor skills). Unique to the leadership skills outcome, reflection ($t=2.11$, $p=.035$) and group functioning ($t=2.34$, $p=.019$) also were significant predictors of outcome achievement. The level 1 predictors were all related as hypothesized, with increases in the quality indicators associated with greater outcome achievement. Collectively, the set of all included predictors explained 54% of the variance in Model 2: leadership skills. A summary of results for all predictors for Model 2 are listed in Table 4 (below).

Table 4. Model 2: Leadership Skills

	Coefficient	Std. Err	T	p	df
Level 1					
Safety*	0.11	0.03	3.20	.002	1322
Individual Respect	0.02	0.02	0.91	.361	1322
Engagement	0.04	0.02	1.92	.055	1322
Reflection*	0.03	0.02	2.11	.035	1322
Feedback from Instructors	0.04	0.02	1.85	.063	1322
Feedback from Participants	-0.02	0.02	-1.23	.261	1322
Presence of Role Models*	0.06	0.02	2.37	.018	1322
Personal Empowerment*	0.29	0.03	9.36	.000	1322
Group Function*	0.04	0.02	2.35	.019	1322
Level 2					
Short Courses*	-1.41	0.52	-2.68	.008	166
Semester Courses*	1.65	0.47	3.49	.001	166

* significant predictors

Discussion

The purpose of this study was to determine the relationship between participant perceptions of program quality indicators and participant development of outdoor skills and leadership skills. Results of this study indicate that the course quality indicators that are most predictive of overall participant development on NOLS courses are empowerment, safety, and presence of role models. This assertion is supported by literature that says experiences for participants that drive development should be safe and supportive (Smith & Akiva, 2008) and that empowerment or youth voice and choice remain critical elements for youth development (Sibthorp et al., 2008). Additional literature asserts that when students are engaged in safe environments where they are supported and encouraged by leaders, they can show significant increases in learning (Johnson, 2006).

This study starts to show evidence that, regardless of the specific desired outcomes, programs that provide empowering experiences, where students feel safe, and with quality role models will foster positive outcomes in their participant populations. Programmers and instructors should look for ways to encourage participants to be active in the decision making processes that occur in a course environment; this will allow students to be able to celebrate successful decisions and learn from unsuccessful

strategies as active agents in the process and help move them toward self-authorship (Baxter Magolda, 2002). Additionally, instructors can look for ways to pass along responsibilities to participants as appropriate. This level of active investment by participants can lead to the development of outcomes.

Additionally, the role that the instructors play in the development of outcomes on outdoor and adventure programs should not be underestimated. Instructors, as active facilitators of the course experience, have a role in the implementation of all the course quality indicators in this study. As a result, separating out the specific role of the instructor as a predictive quality, separate from the rest of the quality predictors, would be difficult if not impossible. Rather, understanding instructors as the primary implementers and interpreters of course quality at the point of service manifests in many ways. While they certainly provide role models in a course environment, this should not be interpreted as their only contribution, although it is likely an important role for field instructors.

Outdoor Skills

For programs that are concerned about the development of outdoor skills as an outcome, this study shows that understanding the role of feedback in a course environment may significantly impact a participant's development of outdoor skills. Outdoor skills are tangible and applied skills, and thus more knowledgeable others take on the roles of experts, which may make their feedback especially important in the development of technical skills. This finding is consistent with the existing literature that shows feedback from instructors to be a critical and important source of learning in outdoor adventure programs (Schumann et al., 2009; Schumann & Millard, 2012). High quality and appropriate feedback seems to be uniquely important to the development outdoor skills.

Leadership Skills

Leadership skills, in contrast, may be developed through less tactile and more conversational means. Thus, it is not surprising that a different set of course quality indicators were significantly predictive of outcome achievement in leadership skills. Where leadership skills are concerned, data reveals that time for reflection and the overall functioning of the group as being significantly predictive of leadership skills as an outcome.

Literature in outdoor and adventure programming has previously told us that providing the time and space for reflection can facilitate the learning process (Gass & Priest, 2006; Green et al., 2000), and this study confirms these assertions. In the seven skills that make up the NOLS model of leadership, self-awareness is at the center. NOLS defines self-awareness as having an understanding of one's own ability, limits, and learning needs, as well as one's ability to learn for their own experiences (Gookin & Leach, 2009). Thus, it seems reasonable, that without time taken for reflective activities where a participant can reflect on his/her experiences, abilities and limits, and goals, development of leadership skills would be near impossible. Results from this study, asserting that reflective time plays a significant role in the development of leadership skills supports this notion.

NOLS also asserts that a positive learning environment is vital to the effectiveness of an educational program (Gookin & Leach, 2009). In positive learning environments students feel like they can work well together, even in the absence of instructors and that they get along well with everyone in the course group. These two things enable students to have a learning environment where they feel emotionally safe to experiment with new leadership styles and skills. Thus, participants report higher outcome achievement in leadership skills as is shown in the results in this study.

Limitations

Several key limitations to this study are worth noting, including correlated predictor variables, the convenience sample, the specific nature of the particular program model, the use of self-perceptions, and the correlational design. Many of the course elements used as predictors in this study are inherently related and some were measured with single items. Constructs such as respect have definitional overlap with concepts such as safety, and it is likely that an engaging learning model remains generally important if partially redundant with other predictors. Quality indicators are complex constructs, and might be more accurately captured if each were measured with multiple items on the CQS. Despite the theoretical importance and empirical support for the aforementioned facets of course program quality, it is likely that other programmatic aspects remain important.

NOLS was used as a convenience sample in this study. Despite NOLS' size and scope within the field of outdoor adventure based programs, the use of NOLS as a sample does limit the generalizability of this study. This study addresses two, of what could be many, developmental outcomes that are affected by program quality in an outdoor and adventure programming setting. While these two outcomes are central to the NOLS program model and these quality elements are valued by NOLS, another organization might find different program elements and outcomes as more central to its model and mission. If other outcomes had been targeted and measured, it is possible that different indicators of quality would have emerged as more predictive and influential to programs with developmental goals.

Perceived skill level differs from actual skill level and perceived course quality differs from actual course quality. Students may believe they are proficient at outdoor skills or that a program prioritizes safety, but there are less subjective ways to assess these variables. However, the authors of this study were primarily interested in how participant perceptions of the quality elements influenced outcome achievement given that observational systems to rate program quality at the point of service (e.g., the Youth Program Quality Assessment (Yohalem, Wilson-Ahlstrom, Fishcher & Shinn, 2007) are not practical in an expeditionary setting.

Finally, the correlational design limits the conclusions that may be drawn from this study. Correlational designs do not imply causality. It remains likely that additional, yet untested, variables mediate the links between the predictor and outcome variables, and it is widely understood that participants themselves are critical to the internalization of learning.

Conclusion

It is important to broaden assessment and evaluation efforts to include a focus on program quality at the point of service. In expeditionary outdoor and adventure programs, this will necessitate progressing beyond the observational tools used in more typical youth settings and focusing on elements of these programs that are both critical and distinct. This study found support for safety, reflection, feedback, role modeling, empowerment, and group functioning as outcome predictors. Each of these elements can be intentionally targeted through both program designs and implementation processes, and they are largely consistent with both contemporary adventure program theory (cf, Sibthorp & Morgan, 2011) and with the extant literature on youth program quality (cf, Wilson-Ahlstrom et al., 2007). It remains a bit surprising that individual respect and engagement were not significant in the models. However, it is possible that these variables were not well captured in the self-report measures used in this study or that these two variables were simply subsumed in other elements of course quality.

For example, respect is often conceptualized and discussed as a component of emotional safety (Gookin & Leach, 2009).

Ultimately, the field of outdoor adventure programming should focus attention and evaluation resources on point-of-service quality that can be directly controlled and influenced by programmers, designers, and successful field-based implementation. As the broader field of youth development is heading in this direction, outdoor and adventure professionals involved with youth could greatly benefit from this approach to youth development. A change in how the field of outdoor and adventure programming approaches the intentional design of program quality from the point of service perspective, could significantly impact the developmental goals for participants.

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