

LEADERSHIP DEVELOPMENT OF FIRST-TIME LEADERS THROUGH
COLLEGIATE ADVENTURE EDUCATION PROGRAMS

by

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ABSTRACT

KRISTIN A. COFFEY. Leadership development of first-time leaders through collegiate adventure education programs. (Under the direction of DR. LINDA SHANOCK)

This study examined the relation between level of experience as a collegiate adventure education student leader and leadership skills necessary for effective first-time managers in the workplace. One-hundred and thirty-three college students between the ages of 18 and 49 participated in this survey-based study. Participants were measured on four leadership skills: communication, leading team achievement, influence, and coaching and developing others. Analysis revealed no relation between two measures of experience and the four leadership skills, though there was a significant small negative relation between team building facilitation experience and the four leadership skills. Student leaders who facilitated more team building groups indicated lower levels of communication, leading team achievement, influence, and coaching and developing others. Given the importance of first-time managers to organizations and the mission of many colleges to develop transferable leadership skills in their students through leader development programs, more research is needed on skill development in collegiate leadership programs.

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INTRODUCTION

First-time managers account for the largest group of leaders in organizations and, through their leadership, directly impact more people than any other leader in those organizations (Gentry, 2016). They have the complex task of managing the work they were responsible for before their promotion and of leading others and their teams to success (Gentry, 2016; Plakhotnik et al., 2011). However, the skills that led to an employee being promoted are not the same as those needed once they are a leader (Gentry et al., 2014; Plakhotnik et al., 2011).

First-time managers need to develop people management skills (Gentry, 2016) that will allow them to facilitate the development of their employees and their team (Brown, 2006; Plakhotnik et al., 2011). However, in one study, 60% of first-time managers reported receiving no training before transitioning into their first leadership role and 26% felt they were not ready to lead others (Gentry et al., 2014). Additionally, half of first-time managers are being deemed “failures” by both subordinates and supervisors (Arneson, 2005; Gentry, 2016; Gentry et al., 2014).

By not supporting first-time managers in their new roles, organizations have experienced loss of resources (Gentry, 2016; Plakhotnik et al., 2011), reduced productivity (Gentry, 2016), and damage to employee relationships (Gentry, 2016; Plakhotnik et al., 2011). When a first-time leader fails, there is significant cost to replace that person, including the costs of recruitment, hiring, and on-boarding (Plakhotnik et al., 2011). Somaya and Williamson (2008) reported the replacement cost for a position requiring unique skills to be between 100% and 150% of the associated salary. That cost

does not include the loss of human capital- the organizational knowledge and skills the departing employee takes with them (Somaya and Williamson, 2008).

Instead, by supporting first-time managers' success, organizations can capitalize on the benefits of developing future leaders and in retaining top talent, including through the competitive advantage of "knowledge creation and continuous learning" of individuals (Ellinger et al., 1999, p. 105). In a 2015 report by the Society for Human Resource Management (SHRM), both human resource (HR) professionals and non-HR C-suite executives reported the top challenge for the current and future states of their organizations was developing the next generation of organizational leaders. Second to developing future leaders was retaining high-performing employees (SHRM, 2015).

It is important to understand how to support first-time managers. Developing the skills that lead to being effective first-time managers can start as early as college through leadership development programs (Cress et al., 2001; Dugan, 2006; Zimmerman-Oster & Burkhardt, 1999), including adventure education programs.

While much research has examined the impact of adventure education programs on participants, little is known about the development of leadership skills for student leaders who facilitate these programs. Similar to the way a first-time manager is promoted for their technical skills and not their people-management skills, a college student who has demonstrated sought-after technical skills as a participant may be promoted to an adventure education leader because they performed well. However, the skills needed to be a manager of adventure education participants is quite different, involving leading others and ensuring team success.

Can leading adventure education programs in college help leaders develop leadership skills that will transfer to future leadership roles in post-college workplaces? The present study examined the potential for student leaders to develop leadership skills through collegiate adventure education programs.

Brief Summary of the State of Leadership Theory

Leadership is defined as “the ability to direct a group toward the attainment of goals.” (Riggio, 2018, p. 386). This definition emphasizes the role of *effective* leaders and not just those assigned the position of leader (who may or may not be successful; Riggio, 2018). Theories of effective leadership have led from universalist theories in the early 1900s, such as the great man/woman theory (Riggio, 2018), to behavioral theories around the 1950s that focused on social behaviors (Lord et al., 2017; Riggio, 2018). The mid- to late-century brought increased research on the role of cognition in leadership, such as the role of stereotypes on behavioral ratings (Lord, et al, 2017) and contingency theories that focused on the impact of the situation on effective leadership (Riggio, 2018).

The current wave of leadership theories emphasizes relationships and trust, such as transformational leadership. Transformational leadership theory defines effective leaders as those who engage their follower’s values and social identities (Lord et al., 2017). Transformational leaders inspire and influence followers, increasing work commitment, trust, job satisfaction, and performance through four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Judge & Piccolo, 2004). Idealized influence emphasizes the impact of leaders as role models and the extent to which followers identify with the leader (Judge & Piccolo, 2004). Inspirational motivation is the extent to which leaders inspire followers

with an articulated and appealing vision (Judge & Piccolo, 2004). Intellectual stimulation is the extent to which leaders encourage creativity by listening to their followers' ideas and questioning the status quo (Judge & Piccolo, 2004). Individual consideration is the extent to which leaders adjust their style of coaching and mentoring to both understand and meet the needs of each follower (Judge & Piccolo, 2004).

Merging leadership theory with the need to develop leaders in organizations can take many forms, including using transformational leadership theory, among other approaches, to teach leadership skills (Riggio, 2018). A 2018 meta-analysis supported the importance of several training components to effectively develop leadership and managerial skills, including: conducting a needs analysis to determine skill gaps; providing an opportunity for feedback; and using multiple delivery methods, including practice (Lacerenza et al, 2017). To create training that has significant impact on effective leadership of first-time managers, we must determine what skill gaps exist. Through the work of the Center for Creative Leadership, Gentry (2016) and Gentry et al. (2014) have identified four skill gaps of first-time managers.

Skill Gaps for First-Time Managers

The challenges of first-time managers in terms of the skills they need to be successful can be categorized into four skill gaps (Gentry, 2016; Gentry et al., 2014). These gaps are communication, leading team achievement, influence, and coaching and developing others.

Communication

First-time managers must effectively communicate to their employees through verbal and non-verbal means, by broadening their preferred communication styles to

match their subordinates, and by being active listeners (Gentry, 2016). Communication skills directly impact other challenges that first-time managers face, including conflict management, working with diverse employees, and motivating others (Gentry et al., 2014). Mumford et al. (2007) also emphasized the importance of speaking “to effectively convey information” and active listening “to appropriately comprehend and question in order to achieve a complete understanding” (p.156).

Interpersonal communication competence (ICC) relates well to Gentry’s (2016) communication skill gap for leaders. ICC is the perception of how well interpersonal relationships are managed in communication settings (Rubin & Martin, 1994). This definition emphasizes the relation between appropriate and effective behaviors as a means for achieving goals; communication is judged to be successful by those involved if the goals were achieved (Rubin & Martin, 1994). ICC is comprised of dimensions that, together, create a communicator that listens actively, thinks critically, is adaptable to the situation, and speaks clearly- all aspects of Gentry’s (2016) communication skill gap. Also of note, ICC’s dimensions are skills not traits (Rubin & Martin, 1994), emphasizing the ability for a first-time manager to train and grow in this area.

Leading Team Achievement

First-time managers are responsible for leading their teams to success by encouraging a group of individuals to work together toward a common goal (Gentry, 2016). They must provide direction and alignment while garnering commitment from team members (Gentry, 2016). In addition to these skills, business and strategic skills are important for leading team achievement (Mumford et al., 2007). Managing human resources, such as developing and promoting “individuals in their work (p. 157)” and

strategic skills, such as identifying and objectively analyzing problems and potential solutions, are important for effective leadership (Mumford et al., 2007). First-time managers not only have to focus on the tasks, but also on removing barriers to success, such as developing team cohesiveness and working with limited resources (Gentry et al., 2014).

The targeted goals of adventure education include those skills required for leading team achievement, such as expedition behavior and outdoor leadership (Sibthorp et al., 2007). Expedition behavior is small-group behavior that demonstrates responsibility to the group (e.g. taking ownership of one's tasks and mistakes) and supporting the group's goals (Sibthorp et al., 2007). Leadership in the context of adventure education is the ability to make decisions at critical moments, give and receive feedback, take initiative, and be aware of the needs of the group and the leader (Sibthorp et al., 2007). These two categories of goals, expedition behavior and leadership, define the ability of a leader to be a productive member of a group while also directing that group (Sibthorp et al., 2007)- similar to the balance successful first-time managers maintain between completing their own work and coordinating that of their team.

Influence

First-time managers must motivate, engage, and persuade to ensure they have *personal* influence (Gentry, 2016) in addition to their newly instated *positional* influence. They must gauge how those around them are influenced and adapt their behavior accordingly using logic, personal connection, collaboration, and actions (Gentry, 2016). Additionally, social perceptiveness and negotiation are key to being able to influence others (Mumford's et al., 2007). Influencing others can help first-time managers learn to

delegate more and micromanage less- other common challenges of first-time managers (Gentry et al., 2014). They may be inclined to do the work themselves for efficiency or ease, but micromanaging may only harm overall team achievement.

Gentry's (2016) definition of influence is closely related to one of the four dimensions of transformational leadership: inspirational motivation (Reichard et al, 2011). Inspirational motivation is the ability to motivate and inspire by giving tasks meaning, fostering optimism, and inspiring followers through symbolic actions (Reichard, et al, 2011). The use of emotional impact, symbolism, meaning making, and fostering optimism is key to Gentry's (2016) definition of influence; effective leaders can use these tools to adjust their method of influence to maximize the impact on their followers.

Coaching and Developing Others

Now that first-time managers manage others, they have the additional responsibility of developing their followers (Gentry 2016). They must be able to provide critical feedback (Gentry, 2016; Gentry et al., 2014) and challenging assignments to help their employees develop (Gentry, 2016). First-time managers must also learn to be their employees' advocate, letting others know about their direct reports' successes (Gentry 2016). Additionally, interpersonal skills, including social perceptiveness and persuasion (Mumford et al., 2007), impact the leader's ability to coach and develop others (Gentry, 2016).

Another component of transformational leadership, individual consideration, is related to Gentry's (2016) definition of coaching and developing others. Leaders high in individual consideration promote learning opportunities to subordinates (Deinert et al.,

2014), provide supportive climates (Deinert et al., 2014), and act as coaches or mentors (Judge & Piccolo, 2004). Effective first-time managers must provide challenging yet attainable assignments, provide feedback, and be a mentor (Gentry, 2016)- all of which are aspects of individual consideration.

Development of Leadership Skills

Having identified skill gaps of first-time managers, it is possible to examine ways to improve those skills through training and development. It is well known that leadership skills can be learned (e.g. Mumford et al., 2000). A 2017 meta-analysis revealed that leadership training- defined as leader, managerial, and supervisory training and development programs with the goal of “enhancing leader knowledge, skills, abilities, and other components” (Lacerenza et al., 2017, p. 1987)- is more effective than previously thought (Lacerenza et al., 2017).

Lacerenza, et al. (2017) examined the effectiveness of leadership training for low-level, mid-level, and high-level leaders and found that, while all three levels of management had similar effect sizes with regard to achieving organizational goals (i.e., results), training for low-level leaders had higher effect sizes for training transfer to the job situation (Lacerenza, et al., 2017). This implies that skill training for first-time managers (presumably low-level leaders) should result in good skill transfer back to the job.

These findings indicated that first-time managers can be trained in skill gaps and, potentially, with more success than if trained later in their careers. By providing leadership development prior to promotion, organizations can increase the rates of success of first-time managers and, therefore, reduce the negative consequences of

promoting ill-prepared leaders. Leadership training has been known to begin as early as the college years, providing development opportunities for future employees.

Leadership Development in Higher Education

Leadership development is a part of many college mission statements (Cress et al., 2001). The goal of developing leadership skills in higher education is to enhance the employability of college graduates. The leadership skills students gain while in college may be helpful to those who want to become leaders in work organizations.

Adventure Education in Higher Education

One type of leadership training at the college level is adventure education. Adventure education is founded on experiential education theory, using a combination of adventure activities (e.g. ropes courses, hiking, rock climbing, etc.) and focused reflection to meet learning outcomes (Baldwin et al., 2004). Adventure activities vary in length from a few hours to several days or several months. Each college and university design their programs to meet the needs of their population and to maximize their specific learning outcomes.

Leadership Development of Participants

Over the years, research has consistently demonstrated the positive impact of adventure education on *participants* (e.g. Frauman & Waryold, 2009; Hattie et al., 1997). However, a review of the literature has revealed very little information on the leadership development and skill acquisition of the *student leaders* who facilitate many of these programs. By reviewing the research on the outcomes of participants, we may be able to better understand the impact on student leaders.

Participant outcomes can be grouped into three categories: self-oriented, group-oriented, and outdoor-oriented. Self-oriented outcomes include leadership, self-efficacy, confidence, and self-awareness (Cason & Gillis, 1994; Ewert & Yoshino, 2011; Frauman & Waryold, 2009; Hattie et al., 1997; Sibthorp et al., 2008). Group-oriented outcomes refer to the small group behaviors and ability to communicate effectively within that group (Sibthorp et al., 2007). The third category of outcomes relates to the specific outdoor skills attained by participating in an adventure activity, such as backcountry travel, but also includes transferable skills, such as judgment and decision-making (Sibthorp et al., 2007; Sibthorp et al., 2008).

All three categories of participant outcomes are relevant to the skills necessary for a first-time manager. Self-oriented skills are related to Gentry's (2016) influence skill gap. The ability to be self-aware will impact the social perceptiveness needed for influence. Group-oriented skills are directly related to all four skill gaps. Communication and influence are both key to group-oriented skills, including the ability to communicate effectively and motivate others. Small group behaviors (included in group-oriented skills) emphasize the leader's focus on group goals over personal goals. This focus on the team is what drives the team to success. Group-oriented skills also include giving feedback such as that needed to develop others. Leading team achievement is also enhanced by the strategic skills learned through specific outdoor skills, such as judgment and decision-making "in the face of circumstances with which they are unfamiliar or that are beyond the scope of their experience" (Sibthorp et al, 2008, p. 148).

Leadership Development of Student Leaders

Adventure education student leaders are facilitators responsible for the safety and the education of their participants, balancing the inherent risk of adventure activities while facilitating the program's learning outcomes (D. Sperry, personal communication, September 15, 2019). They have a unique role of leading both peers and those who, in other circumstances, would have authority over them. Student leaders are often leading other college students, though they may also lead faculty and staff (Sandberg et al., 2017). A student leader for a multi-day backpacking trip may face dangerous weather conditions, such as lightning, freezing temperatures, and precipitation as well as complex human factors, such as their group's motivation to succeed and the level of effective communication with their co-leader. While participants' primary goal is to overcome the physical and emotional challenges to complete the trip, the leader's goals are to overcome those same challenges while also navigating the environmental, equipment, and human factors of the expedition (Curtis, 2005).

The impacts on student leaders who facilitate adventure education programs are not well known (Bell et al., 2010). While we can make the connection between participant outcomes and the necessary skills for first-time managers, we can not yet make that same connection to adventure education leaders. It may be that student leaders will experience similar outcomes as their participants, but it is also possible they will experience those outcomes to a greater degree. This may be for several reasons: (1) leaders hold the authority of positional leadership; (2) they have additional responsibilities, such as planning and executing programs and decision-making; and (3) they experience a greater level of the antecedents to positive participant outcomes, such as more opportunities for experience-based training and extended time in the field.

Unlike their participants, adventure education student leaders are in formal leadership positions. Some programs may include a leader-of-the day model where participants take on leadership roles for a specific period (Sibthorp et al., 2008), but the student leaders maintain ultimate authority over decisions. This direct leadership experience allows student leaders to practice leadership skills and may help them develop their leadership identities (Sandberg et al., 2017).

Student leaders also have the additional responsibilities of planning and executing programs (Sandberg et al., 2017) and making critical decisions (D. Sperry, personal communication, September 15, 2019). Planning and execution often involve strategic thinking, including risk assessment, risk mitigation, and future-oriented thinking (D. Sperry, personal communication, September 15, 2019). In addition, student leaders must make decisions in the field based on high-risk and dynamic factors, such as the environment and the psychology of human behavior (D. Sperry, personal communication, September 15, 2019)- factors important to leadership development (Gentry, 2016; Gentry et al., 2014; Mumford et al., 2007; Plakhotnik et al., 2011).

The features of adventure education that are related to positive outcomes in participants can also be found in the experiences of student leaders, including (1) experiential education-based training that uses challenging adventure activities and focused reflection and (2) programs that last several days to weeks (Cason & Gillis, 1994; Hattie et al., 1997; Sandberg et al., 2017). Adventure education programs benefit from an experiential education model where the activities are the conduit for reflection, which leads to skill attainment (Dewey, 1938). Student leaders attend training, but also facilitate adventure programs- learning by doing the work in the field (Sandberg et al.,

2017). The training and programs they facilitate are often mentally and physically taxing due to the leaders' responsibility to the safety and learning outcomes of the group (D. Sperry, personal communication, September 15, 2019). Student leaders have more opportunities for the experience-reflection cycle than their participants, and, therefore, may attain more benefits than participants.

Another feature of programs associated with positive outcomes is the length of the program (Cason & Gillis, 1994; Hattie et al., 1997). Student leaders' overall time in the field can be extensive depending on how long they retain their position (D. Sperry, personal communication, September 15, 2019). A student who enters a student leadership position in their first year of college, continues in that role until their graduation four years later, and leads an average of four days per semester, would have accumulated 32 field days. That number does not include training, preparation for programs, or logistics that occur post-program. Participants may not have the opportunity to attend the number of adventure education programs to match the experience level (i.e. number of accumulated days) of the student leaders. This additional program time may lead to greater levels of outcomes than participants attain.

Adventure education leaders may have comparable or even greater skill acquisition than their participants. Overall, student leaders may benefit from their positions of leadership, additional responsibilities, and greater exposure to antecedents of positive outcomes beyond those of participation.

The impact of this leadership experience on work organizations could be significant given the number of students who are trained as adventure education leaders. In 2006, a census of outdoor orientation programs showed that 3,000 college students

were trained as leaders (Bell et al., 2010). The total number of student leaders would likely have been much larger if the census had been expanded to include leaders of other types of outdoor programs beyond orientation programs.

The Present Study

Adventure education provides an opportunity for students to obtain leadership experience while in college (Sandberg et al., 2017). While there exists some research on first-time managers (e.g. Gentry & Walsh, 2015) and research demonstrating the impact of adventure education on participant outcomes (e.g. Frauman & Waryold, 2009; Hattie et al., 1997), research has yet to demonstrate the outcomes of adventure education on the development of first-time managers' skills. Student leaders of adventure education programs have leadership roles in challenging situations where they can experiment with their professional identities and reflect on their experiences (Sandberg et al., 2017). This environment provides student leaders opportunities practice leading and, therefore, develop the four skills needed for successful first-time managers.

The present study combines the research on adventure education with the literature on first-time managers to examine the impact of leading adventure education programs on college students' attainment of four skills of first-time managers: communication, influence, leading team achievement, and coaching and developing others. Student leaders who have had more opportunities to lead adventure education programs have, consequently, had more opportunities to develop their skills, such that those who have been facilitating programs for longer may demonstrate greater skill acquisition than those who have been facilitating for shorter periods of time. This study compared the leadership skills of adventure education student leaders, participants of

adventure education programs, and college students with no experience with adventure education leadership. The leadership skills measured were based on Gentry's (2016) four skill gaps of first-time managers.

If adventure education programs develop these key leadership skills, adventure education student leaders with longer tenures will report higher levels of leadership skills than (1) those with shorter tenures and (2) those without this type of leadership experience.

Hypotheses

Tenure of student leaders in collegiate adventure education programs will positively relate to the level of leadership skills such that:

1. Tenure of adventure education student leaders will be positively related to levels of (a) communication, (b) influence, (c) leading team achievement, and (d) coaching and developing others.
2. Adventure education student leaders will report higher levels of (a) communication, (b) influence, (c) leading team achievement, and (d) coaching and developing others than participants of adventure education programs.
3. Adventure education student leaders will report higher levels of (a) communication, (b) influence, (c) leading team achievement, and (d) coaching and developing others than students who are not adventure education leaders.

METHOD

Participants and Procedure

Participants were recruited in two phases. The first phase recruited college students through professional contacts and a professional listserv within the adventure education field. This phase occurred between October 2019 and January of 2020 and focused on all college students- adventure education leaders, adventure education participants, and students with no leadership experience in adventure education (i.e. non-leaders). The second phase occurred in February of 2020 and recruited college students who were non-leaders because the initial sample contained only 16 non-leaders, which was below the minimum sample size of 30 (Sekaran & Bougie, 2016). These participants were recruited through professional contacts.

Recruited participants received an invitation to complete an online survey. The survey consisted of demographic information, including tenure as a student leader for an adventure education program, and measures for the four leadership skills (see Appendix). During the first phase of recruitment, participants were offered an incentive of a \$5 Amazon gift card for completing the survey. Participants recruited during the second phase were entered into a drawing for one of six \$10 Amazon gift cards. The incentive was changed due to an unexpected high number of responses during the first phase of the study and, therefore, needing to be more conservative with the remaining funds.

A total of 2,797 responses were recorded using an online survey platform. Of those, 134 were determined to qualify for the study based on appropriately answering the attention check item, taking a reasonable time to complete the study (minimum of 5 minutes), and completing at least 25% of the survey. The large difference between the

number of responses and the number of qualified participants was due to the impact of malicious bots. Approximately 2,200 answers from bots were identified and removed from the data using the predetermined inclusion criteria: the attention check item and the 5-minute minimum completion time.

The 2018 survey of enrolled college students (United States Census Bureau, 2020) lists the mode for age as 20 to 24 years (42.66% of the total population of enrolled college students). Participants in this study were college students between the ages of 18 and 49 years old with a mean age of 21.7 years ($SD = 3.73$). Female students accounted for 55.71% of the population of enrolled college students in 2018 (United States Census Bureau, 2020). In this study, 55.6% of participants were female with no participants identifying as non-binary. The sample from this study was consistent with the age and sex of the greater population of enrolled college students.

The race and ethnicity of students, however, did not align with the U.S. Census Bureau data. The most common race for enrolled college students in the United States was White, accounting for 54.20% of the population. The second most common ethnicity was Hispanic, accounting for 18.90% of the population. In this study, the most common race and ethnicity identified were in line with the U.S. Census Bureau, but at a higher percentage of the sample. Participants primarily identified as White (72.7%) with the next largest ethnic identity being Hispanic/ Latinx/ Chicanx (12.9%). This study asked participants to identify their ethnicity, not their race, which may account for some of the difference between the sample and population. However, it may also be that White students were oversampled.

When asked if they were student leaders of a college adventure education program, 103 participants (76.9%) responded affirmatively. Of the 31 non-adventure education leaders (referred to as non-leaders for the purposes of this study), 17 responded that they had participated in at least one adventure education program. Therefore, for the purposes of this study there were 103 adventure education leaders, 17 adventure education participants, and 14 students who had not participated in adventure education and were not adventure education leaders. Thus, in the final sample, despite phase two recruiting, the number of adventure education participants and students who had not participated in adventure education were both under the minimum recommended sample size of 30 per participant grouping (Sekaran & Bougie, 2016).

Measures

Demographic Information

Demographic information was collected from participants, including age, sex, and ethnicity to determine if the sample was representative of typical college students as compared to United States Census Bureau (2020) data. Ethnicity was requested as an open-ended item and then coded to match the United States Census Bureau (2020) categorizations: White-non-Hispanic, Black, Asian, and Hispanic. Participants who indicated an ethnicity not in one of these categories was coded as “Other.” Sex was also requested with an open-ended item to allow for non-binary genders; however, all participants responded as “female,” “woman,” “male,” or “man” and, therefore, were categorized as either “female” or “male.” This also allowed for comparison to the United States Census Bureau (2020) designations of “female” and “male.” Previous and

concurrent leadership experience was also collected to determine if there was a relation between leadership experience, in general, with the criterion measures.

Attention Check

The survey included an attention check item embedded in the transformational leadership scale. This scale was chosen for the attention check item because of its relative length compared to the other measures. Respondents who did not select the correct response to this item were removed from the data set prior to data analysis.

Tenure as a Student Leader of Adventure Education Programs

Tenure was measured by asking participants to indicate how many semesters they had been a student leader for their college's adventure education program. Two additional items were included to measure experience: the number of field days they accrued as trip leaders and how many team building groups they had facilitated. Given the range of experience possible in a given semester (which may vary program-to-program and between individual leaders), these two items were included as alternative measures of tenure.

Communication

Communication was measured with the 10-item Interpersonal Communication Competence Scale (ICCS; Rubin & Martin, 1994; see Appendix). The ICCS uses a 5-point Likert-type scale from 1 (almost never) to 5 (almost always). It measures ten dimensions. Self-disclosure is the ability to communicate one's personality to others (Rubin & Martin, 1994). Empathy is the ability to feel "with the other" (Rubin & Martin, 1994, p. 34). Social relaxation is the level of comfort one has in an interaction, including when there are negative reactions (Rubin & Martin, 1994). Assertiveness requires the

balancing of being an advocate for one's self with upholding the rights of others (Rubin & Martin, 1994). Interaction management allows a person to navigate the procedures of conversation, such as turn taking (Rubin & Martin, 1994). Altercentrism is an orientation to others over the self, leading individuals to be attentive, perceptive, and responsive during conversations (Rubin & Martin, 1994). Expressiveness is the verbal and non-verbal communication of one's feelings (Rubin & Martin, 1994). Supportiveness is the ability to convey a balance of power in the conversation through such actions as being descriptive instead of evaluative (Rubin & Martin, 1994). Immediacy demonstrates that one is present in the conversation through verbal and nonverbal means, such as facing the other person and answering questions directly (Rubin & Martin, 1994). The final dimension of the ICCS, environmental control, is the ability to cooperate and get others to agree in order to achieve the goals of the communication (Rubin & Martin, 1994).

The ICCS measures aspects of communication that define Gentry's (2016) skill gap, such as active listening (e.g. interaction management, altercentrism, supportiveness, and immediacy), broadening preferred communication styles to match the listener (e.g. self-disclosure, empathy, interaction management, and altercentrism), and speaking clearly (e.g. expressiveness and supportiveness; Rubin & Martin, 1994). The ICCS dimensions also measure aspects of communication that impact common areas of growth for leaders (Gentry et al., 2014), such as conflict management (social relaxation, assertiveness, altercentrism, supportiveness, immediacy, and environmental control) and working with diverse employees (e.g. empathy, interaction management, altercentrism, supportiveness, and immediacy). The dimensions emphasize the importance of both

verbal and non-verbal communication (Rubin & Martin, 1994), another key component of Gentry's (2016) skill gap.

In past studies, the ICCS had a coefficient alpha of .63 and demonstrated good concurrent validity with cognitive flexibility ($r = .49, p < .01$) and communication flexibility ($r = .52, p < .01$; Rubin & Martin, 1994). In this study, the ICCS had a coefficient alpha of .77, which allowed the use of a composite score for this measure.

Leading Team Achievement

Leading team achievement was measured using eight items from Sibthorp et al.'s (2007) NOLS Outcome Inventory (NOI). The NOI was developed to assess the participant outcomes from National Outdoor Leadership School courses. The complete NOI consists of 29 items. It was originally designed to be used on an eight-point scale from 1 (not like me) to 8 (like me), but is currently used by NOLS (S. Rochelle, personal communication, October 10, 2019) and other researchers (e.g. Shooter et al., 2007; Collins et al., 2012) with a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). I chose to use the 7-point scale because it was consistent with other measures in this study and has shown to have strong internal consistency (e.g. $\alpha = .97$ for the leadership construct; Collins et al., 2012).

The NOI measures six distinct constructs: (1) communication ($\alpha = .76$), (2) leadership ($\alpha = .82$), (3) small group behavior ($\alpha = .79$), (4) judgment in the outdoors ($\alpha = .85$), (5) outdoor skills ($\alpha = .86$), and (6) environmental awareness ($\alpha = .76$; Sibthorp et al., 2007). The original NOI also included a lie scale such that positive responses to two items were mutually exclusive.

Two subscales were used to assess leading team achievement in this study: leadership and small group behavior (see Appendix). The leadership subscale was defined as “taking initiative, responsibility, and decision-making roles” (Sibthorp et al., 2007, p. 7) and small group behavior was defined as “being a positive and productive group member” (Sibthorp et al., 2007, p. 7). Together, these NOI subscales contribute to the ability of a leader to (a) monitor the team’s work, stay organized, and meet deadlines by expressing ideas and providing feedback and (b) build a team and manage the team’s chemistry by being a productive group member, providing feedback, and taking responsibility. Monitoring the team’s work and building the team are all aspects of leading team achievement (Gentry, 2016).

Because this study assessed only two of the six constructs, the NOI was reduced to eight items- five items for leadership and three items for small group behavior. The instructions to participants were also modified. Sibthorp et al.’s (2007) original measure used a retrospective model, asking participants to respond to each statement in the present as well as to think back to before their NOLS course and respond as they would have then. For the purposes of this study, I asked participants to only respond to each statement in the present. The coefficient alpha for both subscales were above .70 and, therefore, composite scores were calculated for each (NOI leadership = .83; NOI small group behavior= .72).

Influence

Influence was measured with one component of the 40-item Transformational Leadership Measure (Reichard et al., 2009; see Appendix). This measure assesses four components of transformational leadership, one of which is related to Gentry’s (2016)

influence: inspirational motivation (twelve items). Responses range from 1 (very strongly disagree) to 7 (very strongly agree). This measure has demonstrated good construct validity and reliability ($\alpha = .96$; Reichard et al., 2011). The coefficient alpha for this subscale was .90, which allowed the use of a composite score for this measure.

Coaching and Developing Others

Coaching and developing others was measured with one component of the 40-item Transformational Leadership Measure (Reichard et al., 2009; see Appendix). This measure assesses four components of transformational leadership, one of which is related to coaching and developing others: individual consideration (nine items). Responses ranged from 1 (very strongly disagree) to 7 (very strongly agree). This measure has demonstrated good construct validity and reliability ($\alpha = .96$; Reichard, et al., 2011). The coefficient alpha for this subscale was .86, which allowed the use of a composite score for this measure.

RESULTS

Given the unusually large number of respondents (over 2,700), the data were first checked for the pre-determined criteria: (1) incomplete responders (25% or less of the survey completed) and (2) inattentive responders (i.e. incorrect response to the attention check item and/or completed the survey in less than five minutes). This resulted in final data set of 134 respondents. The Qualtrics platform used to collect data did not offer an option to ensure that the respondent was not a robot (i.e. Captcha option to ensure a human is responding), so it is likely that many of the ‘respondents’ of the 2,700 were not human respondents. Luckily, the attention and completion criteria were helpful in ruling them out as qualified responses.

The data were then checked for missing data. The frequency of missing data from qualified responses were between 0.45% and 0.72% for the criterion variables. These percentages were well under the common rule of thumb of 5% to be considered problematic (Sekaran & Bougie, 2016). Therefore, to help retain participants to ensure a reasonable sample size, missing data for criterion variables were replaced by the means for the missing items (Sekaran & Bougie, 2016). Composite scores were then calculated for the outcome variables after assessing that the Cronbach alphas were greater than .70 for each measure.

Descriptive statistics were calculated for study measures, including means and standard deviations (see Tables 1, 2, 3, and 4). Two nominal variables were recoded using dummy codes so they could be included in correlations. Ethnicity was dummy coded as 1 (White, non-Hispanic) and 0 (non-White). Sex was dummy coded as 1 (Female) and 0 (non-Female). Correlations were run for all study participants (Table 1),

for adventure education leaders (Table 2), for study participants who had participated in adventure education programs (Table 3), and for all study participants excluding adventure education leaders (i.e. non-leaders – participants of adventure education who had not led a program and students who had never participated in adventure education; Table 4.)

Hypothesis 1 posited that the tenure of adventure education leaders would be positively related to the four criterion variables: (a) communication, (b) influence, (c) leading team achievement, and (d) coaching and developing others. This hypothesis was not supported. As shown in Table 2, the number of semesters a student leader held a leadership position with an adventure education program was not related to the criterion variables.

A second indicator of experience as an adventure education leader, the number of days a student leader facilitated adventure trips, was related to only one criterion variable, communication, and not in the expected direction. The more days a student leader led adventure trips, the lower their self-assessment on the Interpersonal Communication Competence Scale (ICCS), $r(101) = -.20, p = .04$.

The third and final indicator of leadership experience in adventure education, the number of team building groups student leaders facilitated, showed significant small to moderate negative relations to all four criterion variables. The more team building groups student leaders facilitated, the lower their scores on the ICCS, $r(101) = -.29, p < .01$, the Transformational Leadership inspirational motivation scale, $r(101) = -.34, p < .01$, Transformational Leadership individual consideration scale, $r(101) = -.33, p < .01$, the

NOLS Outcome Inventory (NOI) leadership scale, $r(101) = -.40, p < .01$, and the NOI small group behavior scale, $r(101) = -.37, p < .01$.

Also of note for adventure education leaders, the number of leadership positions they held was not related to any of the criterion variables (see Table 2). However, there was a significant moderate negative relation between the number of leadership positions held and communication competence for adventure education *participants* such that the greater the number of programs they participated in the lower their score on the ICCS, $r(15) = -.50, p = .04$.

The second hypothesis posited that adventure education student leaders would report higher levels of (a) communication, (b) influence, (c) leading team achievement, and (d) coaching and developing others than participants of adventure education programs. No differences were found between the mean scores for student leaders ($n = 103$) and adventure education participants ($n = 17$) for any of the four criterion variables (see Table 5).

Of note, significant moderate to large negative relations were found for adventure education participants between the number of adventure education programs they participated in and four of the five criterion variables. The more adventure education programs they participated in, the lower their scores on the ICCS, $r(15) = -.57, p = .02$, Transformational Leadership inspirational motivation scale, $r(15) = -.64, p < .01$, Transformational Leadership individual consideration scale, $r(15) = -.51, p = .04$, and the NOI small group scale, $r(15) = -.50, p = .04$.

The third hypothesis posited that adventure education student leaders would report higher levels of (a) communication, (b) influence, (c) leading team achievement,

and (d) coaching and developing others than students who were not adventure education leaders. Participants included in this non-leader group were the study participants who were not adventure education leaders (including adventure education participants). This hypothesis was not supported. There were no significant differences between adventure education student leaders ($n = 103$) and non-leaders ($n = 31$) in their responses to the four criterion variables (see Table 6). There was also no relation between leadership experience (independent of adventure education leadership) and the criterion variables for either the adventure education leader group (see Table 2) or the non-leader group (see Table 3).

DISCUSSION

The three hypotheses posited in this study were not supported. Adventure education student leaders did not report greater leadership skills with more leadership experience nor did they report greater leadership skills than adventure education participants or students who were not adventure education leaders.

This study revealed significant small negative relations between the number of team building groups students facilitated and the four leadership skills assessed. These relations were in the opposite direction predicted and were not found for other measures of tenure, including the number of semesters students held their positions or the number of days leaders facilitated adventure trips. One reason for this finding could be due to student leaders gaining more accurate self-perceptions with more experience.

The Dunning-Kruger effect explains the tendency for top performers to underestimate their performance and for bottom performers to overestimate their performance (Kruger & Dunning 1999). This effect postulates that poor performers remain in the bottom ranks for performance because they don't know what they don't know (Kruger & Dunning 1999). Receiving feedback, understanding that feedback, and being in situations that are conducive to feedback all impact the Dunning-Kruger effect (Kruger & Dunning 1999). Self-appraisals are improved through experience on the job (Yammarino & Atwater, 1993), receiving feedback from relevant others (Atwater et al., 1995; Yammarino & Atwater, 1993), and experience with self-rating (Yammarino & Atwater, 1993). Adventure education programs tend to give the opportunity for feedback (Sibthorp et al., 2007), which may include self-ratings and ratings from participants, peers, and supervisors. This experience may enhance students' feedback orientation

(London & Smither, 2002). Students who enter an adventure education program and believe they have exemplary communication skills, for example, may learn through leading programs, working with peers, and observing others, that they are not as good at communication as they thought. These students may begin to recognize that they have a lot more room to grow their leadership skills than they thought coming into the program. The more time students are leaders in these programs, the more accurate their self-perceptions may become. More accurate self-perceptions may lead to a more accurate, though lower, assessment on leadership skills.

It is also possible that students who are less accurate in their self-perceptions and/or resistant to feedback leave their leadership positions (voluntarily or involuntarily). This attrition may account for the lower scores on measures of leadership skills over time. Adventure education programs that focus training on self-awareness and on giving and receiving feedback may see improvements in overall organizational effectiveness (Yammarino & Atwater, 1993) and, therefore, be inclined to create a positive feedback culture (London & Smithers, 2002). This culture may enhance the opportunity to improve individual's feedback orientation (London & Smither, 2002) as noted above, but may also incline adventure education programs to remove students from leadership positions who demonstrate low feedback orientation to mitigate the negative impacts to organization effectiveness. This attrition of students with inaccurate self-perception and low feedback orientation may result in more accurate, though lower, overall scores on measures of leadership skills.

Another important finding was the relation between participating in adventure education programs and four of the five leadership skills measured in this study. While

the research in the adventure education field would suggest that participation in adventure education programs would lead to increased skills, such as communication and small group behaviors (e.g. Frauman & Waryold, 2009; Hattie et al., 1997), this study revealed that the self-assessment of skills decreased with more participation. Could this be due to a similar Dunning-Kruger effect of student leaders? It is also possible that, similar to student leaders, adventure education participants with low feedback orientation and poor self-perception self-select out of participating in adventure education programs where there is a healthy culture of feedback.

In either case, it is important to note that the effect size for the adventure education participant group was greater than for the adventure education leader group. The small sample size means there is less power in the former group's results but may still indicate that participants are gaining more accurate self-perception than leaders. Perhaps student leaders are focusing more on their individual technical skill development and the groups' overall development, while participants are able to solely focus on their individual leadership development. It is also possible that program directors seek out and hire student leaders who already demonstrate more accurate self-perception than would be found in the average adventure education participant. Therefore, hiring students who have above average self-perception accuracy would lead to a smaller effect size for skill development over time than would be seen in adventure education participants.

This study has demonstrated that there is an important relation between experience with adventure education and leadership skill development. That relation was not as expected and deserves further exploration. The limitations of the present study will be evaluated before discussing possible avenues for research and practice.

Limitations

Limitations of this study included poorly designed study items, the use of self-assessment at a single time point, a small sample size, and demographics of the sample. Two study items designed to measure experience were meant to be mutually exclusive, but participants responded as if they were not. Student leaders were asked what type of programs they facilitated in their adventure education programs: trips, team building, or both. They were then asked how many of each type of program they had facilitated. Participants responding that they facilitated only trips should have responded that they led zero team building programs, and vice versa. Out of 103 student leaders who participated in this study, 27 student leaders reported they facilitated team building programs only, 33 reported trips only, and 42 reported they facilitated both types of programs. However, 96 of the student leaders reported numbers when asked how many trips they facilitated and 87 reported numbers when asked how many team building groups they facilitated. This may be due to misunderstanding the survey items regarding the type of programs they facilitated and/or the number of programs they facilitated. This lack of clarity may explain why there was a significant relation between the number of team building groups facilitated and the four criterion variables but neither the number of days leading trips nor the number of semesters as a leader.

This study only used self-assessment to measure leadership skills. Self-assessment is known to be unreliable (Yammarino & Atwater, 1993) and would benefit from including objective assessments of leadership skills as well as assessment by others. Future research should include assessment by peers, supervisors, and program participants to help determine the accuracy of self-assessments. Additionally, objective

measures of skills would enhance the robustness of future research. One example of an objective measure could be the number and types of incident/ accident reports generated during the programs student leaders facilitate. Another objective measure could be the number of times leaders contact their supervisor(s) during a program. Both types of objective measures would assess how well the leader is managing the program, their participants, and their co-leaders. Lower rates of incidents/ accidents and less supervisor contact during programs may indicate that leaders are more skilled in communication (with their co-leaders and participants) leading team achievement, influence, and coaching and developing others.

Another limitation of this study was that assessment only occurred at one time period. This cross-sectional design did not allow for detecting possible causal connections between predictor and criterion variables that would be possible with an experimental design or from a longitudinal design (Sekaran & Bougie, 2016). A longitudinal design would also have controlled for turnover of leaders out of their adventure education programs and, possibly, allowed for assessment of the reasons for that turnover.

The overall sample size for this study was adequate with 134 total participants, which is well over a recommended minimum of 30 participants for studies involving comparisons across groups, but was still relatively small (Sekaran & Bougie, 2016). Additionally, two of the groups created to test the study hypotheses were small. The participant-only group only contained 17 participants, far below the minimum of 30 recommended (Sekaran & Bougie, 2016), and the non-leader group contained 31 participants, just above the minimum. The small sample limited the power to detect

significant differences between groups and limited the generalizability of the findings (Sekaran & Bougie, 2016). Statistics generated from small samples are also vulnerable to instability/lack of reliability such that the sample statistics may not accurately estimate the population (Schönbrodt & Perugini, 2013). Additionally, given the small sample, a type III error was possible- accepting the null hypotheses was correct, but the cause of that effect was misunderstood- though this was mitigated to some degree by using two-tailed *t*-Tests.

While the sample was from the population of interest (i.e. college students) and had a representative mean age and frequency of men and women, White students were oversampled. Additionally, this sample was compared to the demographics of all college students in the United States, but not to college student leaders. It is possible that the populations of college student leaders and, even more specifically, adventure education student leaders differ in some significant way from the United States' population of enrolled college students. These possible differences would also make these results less generalizable to adventure education leaders nationally.

Implications and Future Research

Given the failure rate of first-time managers (Arneson, 2005; Gentry, 2016; Gentry et al., 2014), college leadership training programs could be an avenue for developing important leadership skills that could help prepare future workplace leaders for their roles. This study demonstrated that collegiate leadership programs, such as adventure education, may not be leading to the skill acquisition intended and assumed to be happening.

Research from the adventure and experiential education fields has demonstrated positive outcomes of participation (e.g. Hattie et al., 1997). However, there has been a dearth of research on the outcomes for the student leaders who facilitate these programs (Bell, Holmes, & Williams, 2010). This study demonstrated that there may be important leader development occurring, though perhaps not as envisioned by program directors. There may be an important role for feedback and experience in skill development (Atwater et al., 1995; Kruger & Dunning 1999; Yammarino & Atwater, 1993) that is present in adventure education programs. Adventure education program directors can improve their program and participant outcomes by ensuring they create a positive feedback culture (London & Smithers, 2002). Students who receive effective feedback will become more self-aware (Atwater et al., 1995; Yammarino & Atwater, 1993) and the programs, themselves, will be more effective (Yammarino & Atwater, 1993). By better preparing college students for first-time management, organizations can capitalize on a workforce that is ready to lead. Future research could examine these issues by exploring the role of feedback, feedback culture, and feedback orientation on skill development of adventure education student leaders.

Also, future research is needed to determine how to maximize skill acquisition, development, and transfer in collegiate adventure education programs. Research should go beyond the small samples that are common in adventure education research (e.g. Boettcher & Gansemer-Topf, 2015) and published in field-specific journals (e.g. *Journal of Outdoor Recreation, Education, and Leadership*; *Journal of Experiential Education*; and *Journal of Higher Education*). Bridging fields of study beyond higher education and recreation may help overcome the barriers to understanding leader development at the

college level. Combining research from industrial-organizational psychology, business, communications, and other fields that study leadership will increase the breadth of knowledge that can be applied to college leadership programs.

For example, taking what is known in industrial-organizational psychology about leader development (e.g. Lacerenza et al., 2017) and what is known in higher education about leader identity development (e.g. Komives et al., 2005), we can create effective training programs. These programs should then be assessed across programs, institutions, and cultures using robust methods. This assessment data, collected strategically, would contribute to the catalog of information on leader development. This information would be useful to college program directors as well as organizations who recruit college students into their own leader training programs. To be useful, however, that data must be published across disciplines- sharing what is assessed in college training programs with the industrial-organizational psychology researchers and practitioners and sharing what is assessed in organizations' leadership programs with the higher education researchers and practitioners. In this way, using research-backed best practices, robust methods of assessment, and publishing across fields of study, we can ensure college students are graduating their institutions with the skills needed by organizations.

Conclusion

This study examined the relation between experience with adventure education programs and leadership skill development. The literature on effective first-time managers was brought together with the research on adventure education programs to examine if student leaders developed important leadership skills by facilitating adventure education programs. While the hypotheses of this study were not supported, important

implications for college leadership programs and organizations seeking to support first-time managers were revealed. Colleges and organizations can benefit from further research on leadership skill development and leadership training at the college level to prepare students for successful first-time management in the workplace.

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TABLE 1

Descriptive Statistics and Correlations for Study Variables of All Participants

	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3
1. Age	133	21.70	3.73	-		
2. Sex ^a	133			-.04	-	
3. Ethnicity ^b	132			-.18*	-.21*	-
4. Lead Status ^c	134			-.03	-.16	.01
5. Communication Competence	134	3.71	.54	-.12	.28**	-.08
6. Inspirational Motivation	134	5.47	.82	-.09	.16	-.02
7. Individual Consideration	134	5.35	.75	-.05	.18**	-.07
8. NOI Leadership	134	5.59	.95	-.11	.15	-.07
9. NOI Small Group	134	5.61	.97	-.04	.08	-.04

	<i>n</i>	<i>M</i>	<i>SD</i>	4	5	6
4. Lead Status ^c	134			-		
5. Communication Competence	134	3.71	0.54	.06	-	
6. Inspirational Motivation	134	5.47	0.82	.00	.67**	-
7. Individual Consideration	134	5.35	0.75	.01	.69**	.84**
8. NOI Leadership	134	5.59	0.95	.00	.67**	.68**
9. NOI Small Group	134	5.61	0.97	-.06	.64**	.68**

	<i>n</i>	<i>M</i>	<i>SD</i>	7	8	9
7. Individual Consideration	134	5.35	0.75	-		
8. NOI Leadership	134	5.59	0.95	.71**	-	
9. NOI Small Group	134	5.61	0.97	.71**	.71**	-

^aSex was coded as 1 (women) and 0 (men). ^bEthnicity was coded as 1 (White, non-Hispanic) and 0 (non-White). ^cLead Status was coded as 1 (not an adventure education student leader) and 0 (adventure education student leader).

* $p < .05$. ** $p < .01$

TABLE 2

Descriptive Statistics and Correlations for Study Variables of Adventure Education Leaders

	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3
1. Age	103	21.80	2.90	-		
2. Sex ^a	103			.02	-	
3. Ethnicity ^b	102			.21*	-.16	-
4. No. Semesters as Leader	103	3.08	1.86	.15	.15	.07
5. No. Field Days	101	46.37	39.12	.21*	.11	.10
6. No. Groups Facilitated	90	37.67	35.77	.25*	-.05	.00
7. No. Other Leadership Positions	99	2.12	2.11	-.07	-.05	-.12
8. Communication Competence	103	3.69	0.56	-.23*	.30**	-.08
9. Inspirational Motivation	103	5.47	0.80	-.14	.26**	-.08
10. Individual Consideration	103	5.34	0.76	-.10	.26**	-.12
11. NOI Leadership	103	5.59	1.01	-.11	.18	-.14
12. NOI Small Group	103	5.64	0.98	-.06	.12	-.12

	<i>n</i>	<i>M</i>	<i>SD</i>	4	5	6
4. No. Semesters as Leader	103	3.08	1.86	-		
5. No. Field Days	101	46.37	39.12	.34**	-	
6. No. Groups Facilitated	90	37.67	35.77	.25*	.68**	-
7. No. Other Leadership Positions	99	2.12	2.11	.09	.07	.04
8. Communication Competence	103	3.69	0.56	.06	-.20*	-.29**
9. Inspirational Motivation	103	5.47	0.80	.05	-.12	-.34**
10. Individual Consideration	103	5.34	0.76	.07	-.12	-.33**
11. NOI Leadership	103	5.59	1.01	-.07	-.18	-.40**
12. NOI Small Group	103	5.64	0.98	-.01	-.16	-.37**

	<i>n</i>	<i>M</i>	<i>SD</i>	7	8	9
7. No. Other Leadership Positions	99	2.12	2.11	-		
8. Communication Competence	103	3.69	0.56	-.04	-	
9. Inspirational Motivation	103	5.47	0.80	-.09	.64**	-
10. Individual Consideration	103	5.34	0.76	-.09	.70**	.84**
11. NOI Leadership	103	5.59	1.01	.01	.70**	.71**
12. NOI Small Group	103	5.64	0.98	.02	.65**	.68**

	<i>n</i>	<i>M</i>	<i>SD</i>	10	11	12
10. Individual Consideration	103	5.34	0.76	-		
11. NOI Leadership	103	5.59	1.01	.73**	-	
12. NOI Small Group	103	5.64	0.98	.70**	.76**	-

^aSex was coded as 1 (women) and 0 (men). ^b Ethnicity was coded as 1 (White, non-Hispanic) and 0 (non-White).

* $p < .05$. ** $p < .01$

TABLE 3

Descriptive Statistics and Correlations for Study Variables of Adventure Education Program Participants

	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4
1. Age	16	20.38	1.02	-			
2. Sex ^a	16			-.29	-		
3. Ethnicity ^b	16			.14	-.25	-	
4. No. Leadership Positions	17	1.65	1.90	-.12	-.09	-.05	-
5. Number of Adventure Education Programs Participated	16	3.06	2.93	.06	-.36	-.01	-.29
6. Communication Competence	17	3.81	0.49	.13	.20	-.25	-.50*
7. Inspirational Motivation	17	5.55	0.81	.07	-.19	-.24	-.10
8. Individual Consideration	17	5.36	0.70	.13	-.19	-.14	-.01
9. NOI Leadership	17	5.79	0.53	-.16	.49*	-.05	-.13
10. NOI Small Group	17	5.55	1.07	.36	.12	-.20	-.33

	<i>n</i>	<i>M</i>	<i>SD</i>	5	6	7
5. Number of Adventure Education Programs Participated	16	3.06	2.93	-		
6. Communication Competence	17	3.81	0.49	-.57*	-	
7. Inspirational Motivation	17	5.55	0.81	-.64**	.82**	-
8. Individual Consideration	17	5.36	0.70	-.51*	.58*	.81**
9. NOI Leadership	17	5.79	0.53	-.49*	.23	.18
10. NOI Small Group	17	5.55	1.07	-.50*	.72**	.63**

	<i>n</i>	<i>M</i>	<i>SD</i>	8	9	10
8. Individual Consideration	17	5.36	0.70	-		
9. NOI Leadership	17	5.79	0.53	.26	-	
10. NOI Small Group	17	5.55	1.07	.74**	.51*	-

^aSex was coded as 1 (women) and 0 (men). ^bEthnicity was coded as 1 (White, non-Hispanic) and 0 (non-White).

* $p < .05$. ** $p < .01$

TABLE 4

Descriptive Statistics and Correlations for Study Variables of Non-Adventure Education Leaders

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1. Age	30	21.50	5.82	-			
2. Sex ^a	30			-.06	-		
3. Ethnicity ^b	30			-.24	-.39	-	
4. No. Leadership Positions	28	2.27	2.93	-.19	.16	.06	-
5. Communication Competence	31	3.77	0.47	.12	.12	-.07	-.02
6. Inspirational Motivation	31	5.47	0.90	-.03	-.20	.17	.19
7. Individual Consideration	31	5.36	0.71	.06	-.18	.15	.26
8. NOI Leadership	31	5.60	0.76	-.14	.04	.24	.09
9. NOI Small Group	31	5.51	0.94	-.03	-.10	.29	-.05

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>5</i>	<i>6</i>	<i>7</i>
5. Communication Competence	31	3.77	0.47	-		
6. Inspirational Motivation	31	5.47	0.90	.79**	-	
7. Individual Consideration	31	5.36	0.71	.67**	.85**	-
8. NOI Leadership	31	5.60	0.76	.50**	.62**	.61**
9. NOI Small Group	31	5.51	0.94	.64**	.67**	.74**

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>8</i>	<i>9</i>
8. NOI Leadership	31	5.60	0.76	-	
9. NOI Small Group	31	5.51	0.94	.53**	-

^aSex was coded as 1 (women) and 0 (men). ^bEthnicity was coded as 1 (White, non-Hispanic) and 0 (non-White).

* $p < .05$. ** $p < .01$

TABLE 5

Descriptive Statistics and t-Tests for Study Variables of Adventure Education Leaders and Adventure Education Participants

	Participants (<i>n</i> =17)		Leaders (<i>n</i> =103)		<i>t</i> (118)	<i>p</i>	Cohen's <i>d</i>
	M	SD	M	SD			
Communication Competence	3.81	0.49	3.69	0.56	.85	.40	.23
Inspirational Motivation	5.55	0.81	5.47	0.80	.35	.73	.10
Individual Consideration	5.36	0.70	5.34	0.76	.09	.93	.02
NOI Leadership	5.79	0.53	5.59	1.01	.79	.43	.25
NOI Small Group	5.55	1.07	5.64	0.98	-.34	.73	.09

TABLE 6

Descriptive Statistics and t-Tests for Study Variables of Adventure Education Leaders and Study Participants Who are Not Adventure Education Leaders

	Non-Leaders (<i>n</i> =31)		Leaders (<i>n</i> =103)		<i>t</i> (132)	<i>p</i>	Cohen's <i>d</i>
	M	SD	M	SD			
Communication Competence	3.77	0.47	3.69	0.56	.73	.46	.15
Inspirational Motivation	5.47	0.90	5.47	0.80	-.04	.96	.00
Individual Consideration	5.36	0.71	5.34	0.76	.13	.89	.03
NOI Leadership	5.60	0.76	5.59	1.01	.05	.96	.01
NOI Small Group	5.51	0.94	5.64	0.98	-.67	.51	.14

APPENDIX: LEADERSHIP DEVELOPMENT SURVEY

Q29. Consent to Participate in a Research Study

Title of the Project: Leadership Development of First-Time Leaders through Collegiate Adventure Education Programs

Principal Investigator: Kristin Coffey, MS, University of North Carolina at Charlotte

Faculty Advisor: Linda G. Shanock, Ph.D., University of North Carolina at Charlotte

Purpose of the Research

You are invited to participate in a research study. Participation in this research study is voluntary. The information provided is to give you key information to help you decide whether or not to participate. If you have any questions, please ask.

- The purpose of this study is to examine the development of leadership skills in college students.
- You will be asked to complete an online survey.
- If you choose to participate, it will require 15-minutes of your time.
- There are no known risks to participation in this study beyond those experienced in everyday life.
- There are no direct benefits to participating in this study, but indirect benefits include advancing our understanding of leadership skill development in college students.
- If you choose not to participate, you will not be treated any differently

Please read this form and ask any questions you may have before you decide whether to participate in this research study.

Why are we doing this study?

The purpose of this study is to examine the development of leadership skills in college students.

Why are you being asked to be in this research study?

You are being asked to be in this study because you are aged 18 or older and a current college student.

What will happen if I take part in this study?

If you volunteer to participate in this study, you will be asked to complete an online survey asking a series of questions about your communication and leadership skills. The

questions are not sensitive or overly personal. The survey should take between 10 minutes and 15 minutes to complete.

What benefits might I experience?

There are no direct benefits to participating in this study, but indirect benefits include advancing our understanding of leadership skill development in college students.

What risks might I experience?

There are no known risks to participation in this study beyond those experienced in everyday life. You will not experience any discomfort greater than what you would experience in your everyday life. We would like to ensure you that all information will be kept confidential according to the guidelines of UNC Charlotte for safe data handling and no one outside the research team will see it. As well, as soon as data collection for this study is complete, contact information will be destroyed and the survey data will be de-identified so that no one could tell who took part in this survey or how they responded. If there is a breach of confidentiality due to a data breach and for some reason someone found out you were part of this study or how you answered the survey, you might experience embarrassment from someone else knowing about your communication and leadership skills. The information from this study will be used for research purposes only and will not be shared with anyone other than in anonymous, large group reporting for conference presentation or publication purposes.

How will my information be protected?

Only the Investigators will have access to the information you provide. The only personally identifiable information collected will be your name and email address if you choose to provide it to receive a \$5 Amazon gift card for participating. Your identity will be protected by removing any possible identifiers from your survey data as soon as data collection of surveys is complete and storing that information separately.

Absolute confidentiality of data provided through the Internet cannot be guaranteed due to the limited protections of Internet access. Please be sure to close your browser when finished so no one will be able to see what you have been doing.

We plan to publish the results of this study. To protect your privacy, we will not include any information that could identify you. We will protect the confidentiality of the research data by destroying contact information as soon as data collection for this study is complete. Additionally, the survey data will be de-identified so that no one could tell who took part in this survey or how they responded.

Other people may need to see the information we collect about you. Including people who work for UNC Charlotte, the study sponsor [if applicable], and other agencies as required by law or allowed by federal regulations.

How will my information be used after the study is over?

After this study is complete, identifiers will be removed from the data/information and the data/information could be used for future research studies or distributed to another investigator for future research studies without additional informed consent.

After this study is complete, study data may be shared with other researchers for use in other studies without asking for your consent again or as may be needed as part of publishing our results. The data we share will NOT include information that could identify you.

Will I receive an incentive for taking part in this study?

Participants who complete the survey will receive a \$5 Amazon gift card if desired. These gift cards are considered taxable income. You will have the option to say no to the gift card.

If your total payments from UNC Charlotte are greater than \$600 in a calendar year, this information will be submitted to the Internal Revenue Service (IRB) for tax reporting purposes. By law, payments to subjects are considered taxable income.

What are my rights if I take part in this study?

It is up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer.

If you withdraw from the study at any time, your data/ information will be stored securely and treated in the same manner as those who did not withdraw. As soon as data collection for this study is complete, the contact information will be destroyed and the survey data will be de-identified so that no one could tell who took part in this survey or how they responded.

Who can answer my questions about this study and my rights as a participant?

For questions about this research you may contact Kristin Coffey, Kristin.coffey@uncc.edu, 704-687-0691 and Dr. Linda Shanock, lshanock@uncc.edu, 704-687-1353

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other

than the researcher(s), please contact the Office of Research Compliance at 704-687-1871 or uncc-irb@uncc.edu.

Consent to Participate

You may print a copy of this form. If you are 18 years of age or older, have read and understand the information provided, and freely consent to participate in the study, you may proceed to the survey.

I agree and wish to participate in this study

I do not wish to participate in this study

Q2. Thank you for taking a few minutes to complete this survey about leadership development! This survey should take about 15 minutes to complete. Click below to begin!

Q31. Are you a college student (either part-time or full-time)?

Yes

No

Skip To: End of Survey If Are you a college student (either part-time or full-time)? = No

Q32. Are you 18 years old or older?

Yes

No

Skip To: End of Survey If Are you 18 years old or older? = No

Q33. Are you a student leader with your college's adventure education program?

Yes, I am employed (paid)

Yes, I volunteer (unpaid)

Yes, I am both employed and volunteer

No

If yes, continue to Q5. If no, skip to Q26

Q5. What types of adventure education programs do you facilitate?

Examples of team building programs include (but are not limited to): mobile team building, low ropes courses, and high ropes courses).

Examples of adventure trips include (but are not limited to): rock climbing, caving, whitewater rafting, backpacking, hiking, etc.

Team building

Adventure trips

Other

Q6. Generally, how often are adventure programs at your college (e.g. trips and/or team building programs) led by college students without direct supervision while in the field or facilitating?

All of the time

Most of the time (half or more of programs)

Some of the time (less than half)

None of the time

Skip To: End of Survey If Generally, how often are programs (e.g. trips and/or team building programs) led by college stude... = None of the time

Q17. About how many semesters have you been a student leader for your college's adventure education program?

Q34. About how many field days do you have leading/ facilitating ADVENTURE TRIPS?

Q38. About how many TEAM BUILDING programs/ groups have you facilitated?

Q19. About how many other leadership positions have you held prior to or at the same time as the one you hold with your college's adventure education program?

Q26. Do you currently have a leadership position? It could be with a campus organization, at work, for a volunteer organization, or elsewhere.

Yes

No

Unsure

Q25 Have you ever been in a leadership position in the past?

Yes

No

Unsure

Q9. Instructions: Here are some statements about how people interact with other people. For each statement, select the response that best reflects YOUR communication with others. Be honest in your responses and reflect on your communication behavior very carefully.

	1- Almost never	2- Seldom	3- Sometimes	4- Often	5- Almost always
--	-----------------------	--------------	-----------------	-------------	------------------------

I allow friends to see who I really am.					
I can put myself in others' shoes					
I am comfortable in social situations					
When I've been wronged, I confront the person who wronged me					
My conversations are pretty one-sided*					
My conversations are characterized by smooth shifts from one topic to the next					
My friends can tell when I'm happy or sad					
My communication is usually descriptive, not evaluative					
My friends truly believe that I care about them					
I accomplish my communication goals.					

* Reverse scored item

Q12 Instructions: Here are some statements about what people may observe about you as a leader. For each statement, select the response that best matches your level of agreement with the statements from 1 (very strongly) disagree to 7 (very strongly agree).

1. My followers would agree that I excel at getting the best out of people.*
2. My followers would say that I am a good mentor.**
3. My followers would say that I bring positive energy to work*
4. Others seem to easily follow my lead.*
5. My followers would tell you that I check in with them on almost a daily basis to find out how they are feeling and thinking.**
6. Each of my followers would say that I know them personally.**
7. One of my primary goals as a leader is to support the continuous learning of my followers.**
8. My followers would tell you that I care about their needs and concerns.**
9. I have found that motivating people to do their best is the primary key to success.*
10. My followers would say that I have an extremely high level of motivation.*
11. My followers would say that I am very attentive to their individual needs and concerns.**
12. I am quite effective in boosting my followers' self-confidence.*

13. I spend a great deal of time getting to know my followers individually.**
14. My followers have told me that my enthusiasm is infectious.*
15. My followers have often told me that they appreciate my attention to their feelings and concerns.**
16. Please select 3 for this item.
17. Inspiring others has always come easily to me.*
18. I work hard to provide my followers with an inspirational vision for our group.*
19. My followers would report that I have cheered them up when they were in a bad mood.*
20. Other people look to me for direction.*
21. My followers would say that I create a supportive environment.**
22. My followers marvel at my energy.*

**Inspirational motivation*

***Individual consideration*

Q16. **Instructions:** Here are some statements about how people may behave while part of a group. Think about how you have interacted with groups you have been a part of in the past. For each statement, select the response that best matches your level of agreement with the statements from 1 (strongly disagree) to 7 (strongly agree).

1. I take initiative in completing group tasks.*
2. I often take responsibility without being asked.*
3. I am good at making decisions.*
4. I make decisions in a timely manner.*
5. I am patient with others.*
6. I place emphasis on group goals above personal goals.**
7. I maintain a positive attitude in adverse conditions.**
8. I can manage conflict that occurs between group members and me.**

**Leadership*

***Small group behavior*

Q24. **Instructions:** The following information will be used to determine if the sample for this study is representative of college students more generally. This information will be kept confidential.

How old are you?

What is your sex?

What is your ethnicity?

Are there any other comments you would like to share with us?

Q22. If you would like to receive a \$5 Starbucks e-gift card for participating in this study, please enter the information requested below. Please note that this information will only be used for distributing the e-gift card. If you do not want to receive the gift card or if you received a gift card in person, you may leave the boxes blank.

Q23. First Name

Q.24. Last Name

Q25. Email address

Q26. FOR UNC CHARLOTTE STUDENTS ONLY:
Your FortyNiner ID number (i.e. your 800- or 801- number)