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**Hunt, Aleyna L. *BOLD STEPS Program Evaluation***

**Abstract**

This paper details the evaluation of Building Opportunities through Leadership Development (BOLD) STEPS, a STEM-focused leadership development program for young women that launched in the summer of 2018. The evaluator and program directors identified five evaluation questions: what was the perceived value of the program and activities, to what extent do participants gain knowledge of leadership skills, to what extent do participants gain confidence in their leadership ability, how do participants perceive women in leadership, and how do participants perceive leadership roles? These questions were assessed using surveys and phone interviews. Analysis of the resulting data revealed the most and least valued program activities, as well as potential areas for improvement. Furthermore, participants on average had growth-oriented leadership mindsets, perceived women to be strong leaders, and recognized that everyone has the potential for leadership in their current role. Participants also had high levels of confidence in their leadership ability, which increased significantly over the course of the program. Given BOLD STEP's overall success and alignment with best practices, the evaluator recommends maintaining the core components while making slight adjustments to decrease fatigue and increase the applicability of program activities.

## Table of Contents

Abstract .....	2
List of Tables .....	6
Chapter I: Literature Review .....	9
Women in Leadership .....	9
Barriers to Female Leadership .....	10
Female Leadership Advantage.....	12
Leadership Development .....	12
Current Study .....	14
Chapter II: Methodology.....	16
Participants.....	16
Measures .....	17
Open-Ended Leadership Knowledge .....	17
Leadership Self-Perception.....	17
Leadership Growth Mindset .....	18
Gendered Leadership Prejudices.....	18
Leadership Role Perceptions.....	18
Leadership Trait Importance.....	19
Leadership Trait Gender Association .....	19
Activity Ranking.....	19
Activity Assessments .....	19
Phone Interview .....	20
Data Collection Procedures.....	21

Pre-Survey.....	21
Paper Activity Surveys .....	21
Post-Survey.....	22
Phone Interview .....	22
Data Analysis .....	23
Chapter III: Results .....	24
Evaluation Question 1: Perceived Value of Activities .....	24
Activity Ranking Results .....	24
Figure 1: Activities Ranked by Level of Engagement.....	25
Activity Assessments Results .....	25
General Programmatic Feedback .....	35
Evaluation Question 2: Knowledge of Leadership Skills .....	40
Leadership Trait Importance Results .....	40
Qualitative Results .....	41
Evaluation Question 3: Confidence in Leadership Ability .....	45
Leadership Self-Perception Results .....	45
Qualitative Results .....	47
Leadership Growth Mindset Results.....	49
Evaluation Question 4: Perceptions of Women in Leadership .....	50
Gendered Leadership Prejudices Results.....	50
Leadership Trait Gender Association Results.....	51
Qualitative Results .....	52
Evaluation Question 5: Perceptions of Leadership Roles.....	53

Leadership Role Perceptions Results.....	53
Qualitative Results .....	54
Chapter IV: Discussion and Recommendations .....	56
Evaluation Question 1: Perceived Value of Activities .....	56
Evaluation Question 2: Knowledge of Leadership Skills .....	57
Evaluation Question 3: Confidence in Leadership Ability .....	58
Evaluation Question 4: Perceptions of Women in Leadership .....	58
Evaluation Question 5: Perceptions of Leadership Roles.....	59
Limitations .....	59
Overall Programmatic Feedback and Recommendations .....	61
References .....	64
Appendix A: Pre-Post Survey .....	67
Appendix B: Activity Survey.....	71
Appendix C: Phone Interview.....	72

### List of Tables

Table 1: Frequencies and Percentages of Fun Ratings for All Activities .....	26
Table 2: Frequencies and Percentages of Challenge Level Ratings for All Activities.....	27
Table 3: Frequencies and Percentages of Value Ratings for All Activities.....	28
Table 4: Frequencies and Percentages of Relevancy to Leadership for All Activities.....	30
Table 5: Frequencies and Percentages of Personal Leadership Learning Ratings for All Activities .....	32
Table 6: Themes Regarding What Participants Learned from Each Activity .....	33
Table 7: Themes for "What Do You Expect to Gain from This Leadership Development Experience?" [Pre-Survey] .....	36
Table 8: Themes for "What Were You Expecting to Get Out of the BOLD STEPS Program Before It Began?" [Interview].....	37
Table 9: Themes for "How Effective Was It to Have BOLD STEPS Programming Integrated Throughout Your Time at the STEPS Camp? What Worked Well? Did You Feel Like You Were Able to Use What You Were Learning Right Away?" [Interview] .....	38
Table 10: Themes for "What Was Your Favorite Part of the BOLD STEPS Program? Does Anything Stand Out as Being Especially Memorable or Meaningful?" [Interview] .....	38
Table 11: Themes for "What Was Your Least Favorite Part of the BOLD STEPS Program?" [Interview].....	39
Table 12: Themes for "Are There Any Thoughts You Would Like to Share Regarding Your Experience with the BOLD STEPS Program?" [Post-Survey].....	39
Table 13: Themes for "Do You Have Any Other Comments You Would Like to Share About Your Experiences with the BOLD STEPS Program?" [Interview] .....	40

Table 14: Average Scores and T-Test Results of Pre- and Post-Survey Leadership Trait Importance .....	41
Table 15: Themes for "What Does Leadership Mean to You?" [Pre-Survey].....	42
Table 16: Themes for "What Does Leadership Mean to You?" [Post-Survey] .....	42
Table 17: Themes for "Please List the Top 3 Most Important Traits or Skills of a LEader That You Can Think of." [Pre-Survey] .....	43
Table 18: Themes for "Please List the Top 3 Most Important Traits or Skills of a Leader That You Can Think of." [Post-Survey] .....	44
Table 19: Themes for "What Strategies Did You Learn to Help You Be a Better Leader?" [Interview} .....	44
Table 20: Themes for "Do You Plan to Continue Growing Your Leadership Skills? If so, How?" [Interview].....	45
Table 21: Average Scores and T-Test Results of Pre- and Post-Survey Leadership Self-Perception .....	47
Table 22: Themes for "What Did You Learn About Your Strengths as a Leader?" [Interview]...48	
Table 23: Themes for "What Did You Learn About Your Weaknesses as a Leader?" [Interview] .....	48
Table 24: Themes for "Do You FEel that the BOLD STEPS Program Changed Your Perception of Yourself as a Leader? Why/Why Not?" [Interview] .....	49
Table 25: Average Scores and T-Test Results of Pre- and Post-Survey Leadership Growth Mindset .....	50
Table 26: Average Scores and T-Test Results of Pre- and Post-Survey Gendered Leadership Prejudices .....	51

Table 27: Average Scores and T-Test Results of Pre- and Post-Survey Leadership Trait

Importance .....52

Table 28: Themes for "Some People Feel that Males are More Likely to Take Risks than Females. Do You Agree with This? In What Ways Do You Think This Impacts

Leadership Ability?" [Interview] .....53

Table 29: Average Scores and T-Test Results of Pre- and Post-Survey Gendered Leadership

Prejudices .....54

Table 30: Themes for "Do You Feel that Everyone Has a Leadership Role, No Matter Their

Current Position? Why/Why Not?" [Interview] .....55



## **Chapter I: Literature Review**

Each year for more than two decades, STEPS for Girls engages 160 young women in science, technology, engineering and math (STEM) programming in the summer before 7th grade. The camp aims to inspire young women to have interest and confidence in entering STEM-related fields. Building Opportunities through Leadership Development (BOLD) STEPS is a new program that goes one step further by offering STEM-related leadership development programming to the high school and college-aged women who help run the STEPS camp as counselors and lab assistants.

The BOLD STEPS program runs concurrently with the STEPS for Girls summer camp, immersing counselors and lab assistants with leadership development programming immediately prior to and during the weeks of summer camp. BOLD STEPS, which began in the summer of 2018, is intended to build confidence and leadership knowledge in participants while dispelling myths regarding women in leadership. Ultimately, the program directors hope to increase the extent to which participants view women as leaders and empower more young women to become leaders in STEM-related fields.

### **Women in Leadership**

Although the disparities are decreasing, women are consistently underrepresented in leadership positions. In Fortune 500 companies, for example, only 6% of CEOs and 22% of board members were female in 2017 (Pew Research Center, 2019). These imbalances are even more pronounced in the STEM and finance sectors, where firms on average have 2% fewer women on their boards than in other fields (Adams & Kirchmaier, 2016). And, despite a record-breaking number of female candidates and winners in the 2018 midterm election, only 25% of the U.S. Senate and 23% of the U.S. House of Representatives is female (Cooney, 2018; Pew

Research Center, 2019). While the issue is complex, much research has been undertaken to enumerate and explain the dearth of female leaders. In doing so, some researchers have even identified areas in which women may have a slight advantage as leaders.

**Barriers to female leadership.** One popular theory that explains the limited number of women in high leadership positions is role congruity theory (Eagly & Karau, 2002). The premise of this theory is that societal expectations exist regarding the roles and traits of men and women. When an individual does not meet the expectations of their gender role, they are evaluated negatively by the people around them (Eagly & Karau, 2002). Researchers Koenig and Eagly (2014) demonstrated that traits are ascribed to a group based on the roles or positions typical of said group. Thus, women, who are often in caregiving roles, are expected to be communal and nurturing. There are similar societal expectations for leaders; unfortunately, they do not align with the female gender role. Koenig, Eagly, Mitchell and Ristikari (2011) conducted a meta-analysis of 69 studies and found that stereotypes about leaders tend to more closely align with masculine compared to feminine stereotypes. High-status leadership roles were particularly highly associated with masculinity (Koenig et al., 2011).

The inconsistency between female stereotypes and leader stereotypes is likely a large contributor to the female leadership gap. In a recent meta-analysis, Badura, Newman, Yan and Jeon (2018) found that men emerge as leaders significantly more often than women, although the gap has decreased over time. Badura et al. (2018) suggested that the gap in leadership emergence was largely explained by communal and agentic traits; communal traits negatively predicted leadership emergence while high agency positively predicted leadership emergence. In other words, gender stereotypes (communality vs. agency) may be a key factor in explaining why some individuals emerge as leaders in groups and others do not.

Once women have obtained leadership roles, they also face pressure to maintain a balance between the expectations of their roles as leaders and their roles as women. For example, in a series of interviews, male CEOs tended to suggest a belief that women should strive to maintain their femininity in order to get ahead in the workplace (Athanasopoulou, Moss-Cowan, Smets & Morris, 2018). Female CEOs in the same study recognized the pressure to maintain and balance their roles as well, reporting a need to be assertive without coming across as too pushy or masculine (Athanasopoulou et al., 2018). In fact, studies show that female leaders who do maintain this balance – such as by being both sensitive and strong (Johnson, Murphy, Zewdie & Reichard, 2008) or by utilizing a participatory leadership style instead of authoritarian (Rhee & Sigler, 2015) – are most effective.

While leadership stereotypes in general tend to have a masculine slant, the saliency of gender norms within particular fields or positions can result in alternative expectations. For example, in political and managerial domains the role of leader is associated with higher masculinity than for educational leaders, like school principals (Koenig et al., 2011). Meanwhile, men in particularly masculine leadership roles were rated as more effective than women in the same roles, while women were rated as more effective than men in less masculine leadership roles (Eagly et al., 1995). Thus, in leadership positions that most strongly deviate from the role ascribed to women – such as in STEM fields – female leaders face greater barriers.

In other areas, however, researchers struggle to find clear differences between male and female leaders. For example, some researchers have found that individuals tend to rate male leaders as more effective than female leaders overall (Johnson et al., 2008; Rhee & Sigler, 2015), while others found no difference in effectiveness ratings of male and female leaders (Eagly, Karau & Makhijani, 1995). Additionally, although subordinates indicate a preference for male

leaders (Rhee & Sigler, 2015), male and female leaders tend to be rated as equally likeable (Johnson et al., 2008). Clearly, the relationship between gender and leadership is a complex and nuanced issue that continues to inspire researchers today.

**Female leadership advantage.** Despite the disadvantages and barriers women in leadership face, research suggests that women may have some advantages when it comes to leadership. One well-researched advantage comes through transformational leadership. The transformational leadership style is characterized by mentoring and empowering subordinates, innovation, and the tendency to develop and articulate plans for the future (Eagly & Johannesen-Schmidt, 2001). Notably, the transformational leadership style can be associated with female gender roles such as communality and nurturance. Transactional leadership, its counterpart, centers on rewarding good work and punishing work that falls below expectations (Eagly & Johannesen-Schmidt, 2001). Research shows that transformational leadership – more so than transactional leadership – is strongly correlated to positive ratings of leadership effectiveness (Eagly & Johannesen-Schmidt, 2001; Lowe, Kroeck & Sivasubramaniam, 1996). Furthermore, individuals are more likely to associate the transformational leadership style with females (Vinkenbergh, van Engen, Eagly & Johannesen-Schmidt, 2011) and female leaders are more likely to actually manifest attributes of transformational leadership (Eagly & Johannesen-Schmidt, 2001). Thus, women have an advantage over men when it comes to harnessing transformational leadership, perhaps because the leadership style aligns with female gender role expectations.

### **Leadership Development**

The lack of women in top leadership positions suggests a need for increased and improved leadership development. Despite the gender disparities in leadership positions, females

are capable leaders with some advantages over males (Eagly & Johannesen-Schmidt, 2001). However, the conflict between the role of leader and female gender roles is a barrier to women self-identifying and being identified as leaders. In order to counteract this, a key aspect of leadership development – especially among women – is internalizing a leader identity (Ely, Ibarra & Kolb, 2011; DeRue & Ashford, 2010). DeRue and Ashford (2010) describe this process as inherently social: individuals claim an identity and others affirm it in a process that over time leads to acceptance of an identity.

Researchers suggest that leadership development programs for women should differ from programs from men; nothing sustainable is gained by ignoring the unique issues women face in the workplace (Ely et al., 2011). However, programs must also avoid placing the fault of the gender gap on women when addressing gender issues. As discussed previously, women who maintain feminine traits are more likely to succeed as leaders (Johnson et al., 2008; Rhee & Sigler, 2015). Therefore, instead of simply re-socializing women into male patterns of leadership, programs should address gender expression while focusing on embracing a balance between the feminine and masculine (Ely et al., 2011; Haber-Curran & Sulpizio, 2017). Leadership development programs should realistically and directly discuss the bias female leaders face while providing means to counter it (Ely et al., 2011). Additionally, encouraging women to discover and focus on their values and purpose as leaders can protect them from fixating on the work of balancing their gender and leadership identities (Ely et al., 2011).

Leadership development programs aimed at young women in particular should incorporate some additional foci beyond those designed for established female professionals. For example, Haber-Curran and Sulpizio (2017) suggest that such programs should emphasize leadership as a capacity to develop rather than as a trait (Haber-Curran & Sulpizio, 2017). By

doing so, programs can help young women see leadership positions as achievable while also encouraging them to exercise leadership outside of positions of power (Haber-Curran & Sulpizio, 2017). Haber-Curran and Sulpizio (2017) further suggest that leadership development programs focus on “voice, power, and self-esteem,” because young women often struggle to make their voices heard and low self-esteem can further perpetuate gender biases (p. 39). Finally, leadership development programs for young women should foster engagement and provide mentorship, giving young women the opportunity to develop leadership skills and identities (Haber-Curran & Sulpizio, 2017). These suggestions regarding leadership development best practices for young women are informed by research and were largely incorporated into the BOLD STEPS program.

### **Current Study**

This program evaluation assessed the newly established BOLD STEPS program. The program directors were interested in measuring change in participants’ self-perceptions of their own leadership ability following the program, as well as changes in participants’ understanding of leadership as a construct. Furthermore, given that this was the first year of BOLD STEPS, the program directors wanted to solicit feedback from participants on the program itself, particularly the program activities. These two overarching research goals were more specifically articulated in five main evaluation questions, which were developed collaboratively between the evaluator and the program directors. The five evaluation questions were as follows:

- (1) To what extent were the activities perceived to be valuable?
- (2) To what extent did the participants gain knowledge about leadership skills?
- (3) To what extent do the participants feel confident in their leadership skills? Did it shift over the course of the program?

- (4) How do participants perceive women in leadership? Did it shift over the course of the program?
- (5) How do participants perceive the role of leaders? Did it shift over the course of the program?

Ultimately, this evaluation was designed to inform plans for BOLD STEPS programming in upcoming years.

## **Chapter II: Methodology**

The purpose of this study was to evaluate the BOLD STEPS program based on the five evaluation questions. To address the established evaluation questions, data was collected from BOLD STEPS program participants through pre- and post-surveys and phone interviews. The pretest posttest design allowed the researcher to examine the impact of the BOLD STEPS program by comparing participant responses across time points. Survey results were then used to inform the semi-structured interview questions. Archival data was also used as part of the analysis for this evaluation. The BOLD STEPS program administered short questionnaires following each activity for their own purposes; this data was utilized so as to reduce survey fatigue among the participants.

### **Participants**

The participants in this evaluation were adolescent women (15-21) who participated in BOLD STEPS in the summer of 2018. All 22 program participants were invited to take part in the study.

Parental consent was obtained for all BOLD STEPS participants under 18 years old. Prior to STEPS camp, an email was sent to all program participants describing the study and inviting them to take part in the pre-survey. A total of sixteen people completed the pre-survey. At the end of camp, the program participants were asked to take part in the post-survey. Twelve people completed the post-survey, resulting in a total of 12 program participants who completed both surveys, allowing for a comparison of responses across time. In the post-survey, participants were also invited to participate in a follow-up phone interview. They were offered a \$10 gift card in exchange for their time. Ten individuals indicated interest in participating in the interview, and of those, eight were ultimately interviewed. Of the two remaining participants who were not



interviewed, one indicated that that she was no longer interested in participating and the other failed to respond to all attempts to schedule an interview.

## Measures

The data collection instruments were designed to address the specific evaluation questions within the context of the BOLD STEPS program. When possible, measures were informed by the literature. In order to assess changes across time, the following measures were included in both the pre- and post-surveys: Open-Ended Leadership Knowledge, Leadership Self-Perception, Leadership Growth Mindset, Gendered Leadership Prejudices, Leadership Role Perceptions, Leadership Trait Importance, and Leadership Trait Gender Association (see Appendix A). The Activity Ranking measure was included in only the post-survey (see Appendix A). Results from the surveys were used to inform the semi-structured interview questions (see Appendix C).

**Open-ended leadership knowledge.** Participants were asked two open-ended questions to assess their knowledge and impressions of leadership generally: “*What does leadership mean to you?*” and “*Please list the top 3 most important traits or skills of a leader that you can think of.*” These items, which were designed to address evaluation question two (knowledge of leadership skills), always appeared first on the surveys to avoid priming effects.

**Leadership self-perception.** Three multiple-choice items were included to assess participants’ confidence in their leadership ability (i.e. *I see myself as a leader; I am knowledgeable about good leadership*). Responses were given on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alphas for these items were .79 at the time of the pre-survey and .87 at the time of the post-survey. The Leadership Self-Perception items were associated with evaluation question three: confidence in leadership ability.

**Leadership growth mindset.** Four multiple-choice items assessed participants' beliefs about one's ability to grow as a leader. The BOLD STEPS program, which utilized Carol Dweck's *Mindset: The New Psychology of Success* (2016), aimed to foster a growth mindset in participants. Items were adapted from the original measure of growth mindset (Dweck, 2016) in order to focus specifically on leadership ability (i.e. *your leadership ability is something you can't change very much; I have the ability to change my leadership ability*). Responses were given on a five-point agreement scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alphas for these items were .41 at the time of the pre-survey and .63 at the time of the post-survey. The Leadership Growth Mindset items were also designed to address evaluation question three: confidence in leadership ability.

**Gendered leadership prejudices.** Two multiple-choice items assessed participants' prejudices regarding leadership capabilities of males and females (i.e. *males tend to be better leaders than females*). Responses to these items were given on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). At the time of the pre-survey, there was a positive correlation between responses to the two items,  $r = .59, p = .017$ . The items were not significantly correlated at the time of the post-survey,  $r = -.04, p = .904$ . This result may have been due to an outlier score paired with a small sample size ( $n = 12$ ) at the time of the post-survey. The Gendered Leadership Prejudices items addressed evaluation question four: perceptions of women in leadership.

**Leadership role perceptions.** Participants were asked three multiple-choice questions regarding leadership potential in different hierarchical roles (i.e. *it is okay for freshmen on a team to offer suggestions to the team captain*). Responses to these items were given a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alphas for these items were .34 at the

time of the pre-survey and .44 at the time of the post-survey. The Leadership Role Perceptions survey items were associated with evaluation question five: perceptions about leadership roles.

**Leadership trait importance.** A series of nine multiple-choice items were included to assess perceived importance of a variety of traits. Participants were asked to indicate on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*) the extent to which they agree that nine selected traits (*aware of their own strengths and weaknesses; trustworthy; a good listener; willing to take risks; aware of what is important to them personally; courageous; able to encourage others; able to share their ideas clearly; able to express appreciation of others*) are essential for a leader. Traits were chosen based on the goals and lessons of the BOLD STEPS program. The trait importance questions were designed to assess evaluation question two: knowledge of leadership skills.

**Leadership trait gender association.** After responding about the importance of the nine selected leadership traits (i.e. *trustworthy; courageous; able to share their ideas clearly*), participants were asked to indicate whether they associated each trait more strongly with males or females. Responses were given on a five-point scale: 1 (*much more true of males*), 2 (*slightly more true of males*), 3 (*equally true of males and females*), 4 (*slightly more true of females*), 5 (*much more true of females*). These items were associated with evaluation question four: perceptions of women in leadership.

**Activity ranking.** Participants were asked to rank the top three activities in terms of how engaging they were (i.e. *Which three activities did you find most engaging?*). This item was associated with evaluation question one: perceived value of activities.

**Activity assessments.** Participants were asked to respond to a series of six questions about each of the activities they took part in during the BOLD STEPS program (see Appendix

B). First, participants were asked to respond about how fun the activity was on a five-point scale: 1 (*awesome!*), 2 (*fun!*), 3 (*OK*), 4 (*meh*), 5 (*hated it*). Participants were then asked if they felt the activity challenged them, using a five-point scale: 1 (*too hard or uncomfortable*), 2 (*good level of challenge*), 3 (*OK*), 4 (*pretty easy*), 5 (*way too easy*). Next, participants were asked to rate the extent to which they found value in the activity on a four-point scale: 1 (*definitely*), 2 (*a bit*), 3 (*not really*), 4 (*waste of time*). Participants were then asked to indicate agreement with the following statements on a five-point Likert scale: “*I understand how this activity was related to leadership*” and “*this activity helped me learn about my own leadership ability.*” Finally, participants were asked to describe what they learned from the activity in a short-answer format. These questions were designed to address evaluation question one: perceived value of activities.

**Phone interview.** Eleven main questions were asked of all participants, with additional follow-up questions and probes used as necessary (see Appendix C). The interview began with broad questions that were easy to answer to get the interviewees more comfortable. For example, they were first asked about their favorite and least favorite parts of the BOLD STEPS program. Participants were also asked about how effective it was to have the BOLD STEPS programming integrated throughout the course of the STEPS camp. Then, the interview questions became more personal, with probing questions such as, “*What did you learn about your strengths as a leader?*” and “*Do you feel that the BOLD STEPS program changed your perception of yourself as a leader? Why or why not?*” It also included questions designed to further explore some of the quantitative results, such as “*Some people feel that males are more likely to take risks than females. Do you agree with this? In what ways do you think this impacts leadership ability?*”

## Data Collection Procedures

First, IRB approval was obtained for the study. For participants who were under 18 years of age, parents were emailed with informed consent information and asked to provide consent for their daughter's participation in both the surveys and the interviews. Parents were given the option to consent to just the surveys and not the interviews, if they preferred. However, no parents opted to limit their consent to only the surveys.

**Pre-survey.** Data was collected via Qualtrics; participants were sent an email with a link to the pre-survey prior to arriving at camp. As such, participants were able to take the survey on their own time in any location with an internet connection, including on mobile devices. Informed consent information was included at the beginning of the survey and participants were asked to indicate that they had read the information and consented to participate.

The pre-survey included 37 items. The survey began by asking participants, "*What do you expect to gain from this leadership development experience?*" The following measures were then administered: open-ended leadership knowledge, leadership self-perception, leadership growth mindset, gendered leadership prejudices, leadership role perceptions, leadership trait importance, and leadership trait gender association (see Appendix A). Finally, participants were asked to respond to three demographic items: age, year in school, and position at the STEPS camp. First and last name were also requested from respondents to match the longitudinal data points. Respondents were assured that their identity would remain confidential. The median completion time for the pre-survey was 12 minutes.

**Paper activity surveys.** In order to get immediate feedback, administrators of the BOLD STEPS program administered paper surveys to participants directly after completing many of the program activities. Participants were ensured anonymity and were given the option to mark their

surveys “NC” to indicate that they did not consent to having their responses used in this study. In this way, the administrators could make adjustments to the program as it happened while also assisting in data collection for this evaluation. The paper activity surveys contained most items from the activity assessment measures described previously, specifically the items regarding fun, challenge, value, and the open-ended item about what was learned.

**Post-survey.** The post-survey was also collected via Qualtrics, with a link to the survey sent via email. Participants were given the opportunity to take the survey at the end of STEPS Camp for Girls. The survey was self-administered and taken individually. Participants were also able to take the survey at a later date, if they preferred. The survey again included informed consent information.

The post-survey, which had a total of 81 possible items, repeated all measures included in the pre-survey so that comparisons could be made (see Appendix A). Additionally, the post-survey incorporated activity assessment measures to fill in the gaps that were not addressed by the paper surveys (see Appendix B). The period of time for which participants attended the BOLD STEPS program varied: some attended for the entire four weeks while others attended for only the first or last two weeks. Because of these varied experiences, routing was used to show participants questions only for activities they actually attended. For participants who were at camp for the full four weeks, for example, eleven activities were assessed. Last, participants were asked for their names and demographic information. Participants were also asked to indicate their interest in participating in a phone interview, and the interested parties were asked to provide contact information. Median duration for the post-survey was 29 minutes.

**Phone interview.** Participants who indicated interest in participating in a phone interview were contacted to set up an interview time. Prior to the interview, informed consent

information was emailed to the participants. A shortened version was read to the participants prior to recording the interview, and verbal consent was received. The interview was then recorded using a mobile app. After the interview was complete, the participants were thanked for their time and were sent a \$10 Amazon gift card in the mail.

### **Data Analysis**

Quantitative data was analyzed using IBM SPSS software and Microsoft Excel. Analyses consisted primarily of descriptive statistics, such as frequencies and percentages. Paired samples t-tests were also used to compare results from the pre-survey to the post-survey.

Interviews were transcribed using VLC media player. Identifiable information, such as names, were excluded from the transcriptions. Qualitative data from the interviews and surveys were then themed using NVivo software. Two coders were used to establish themes and resolve discrepancies in coding. The final themes and theme frequencies presented in this report achieved at least 90% agreement between the two coders.

### Chapter III: Results

The following summary of results is organized by evaluation question. This program evaluation addressed five main evaluation questions, which were established prior to the study by the researcher and BOLD STEPS program directors:

- (1) To what extent were the activities perceived to be valuable?
- (2) To what extent did the participants gain knowledge about leadership skills?
- (3) To what extent do the participants feel confident in their leadership skills? Did it shift over the course of the program?
- (4) How do participants perceive women in leadership? Did it shift over the course of the program?
- (5) How do participants perceive the role of leaders? Did it shift over the course of the program?

Results associated with each evaluation question will be provided in this section; interpretations and recommendations will follow in Chapter IV.

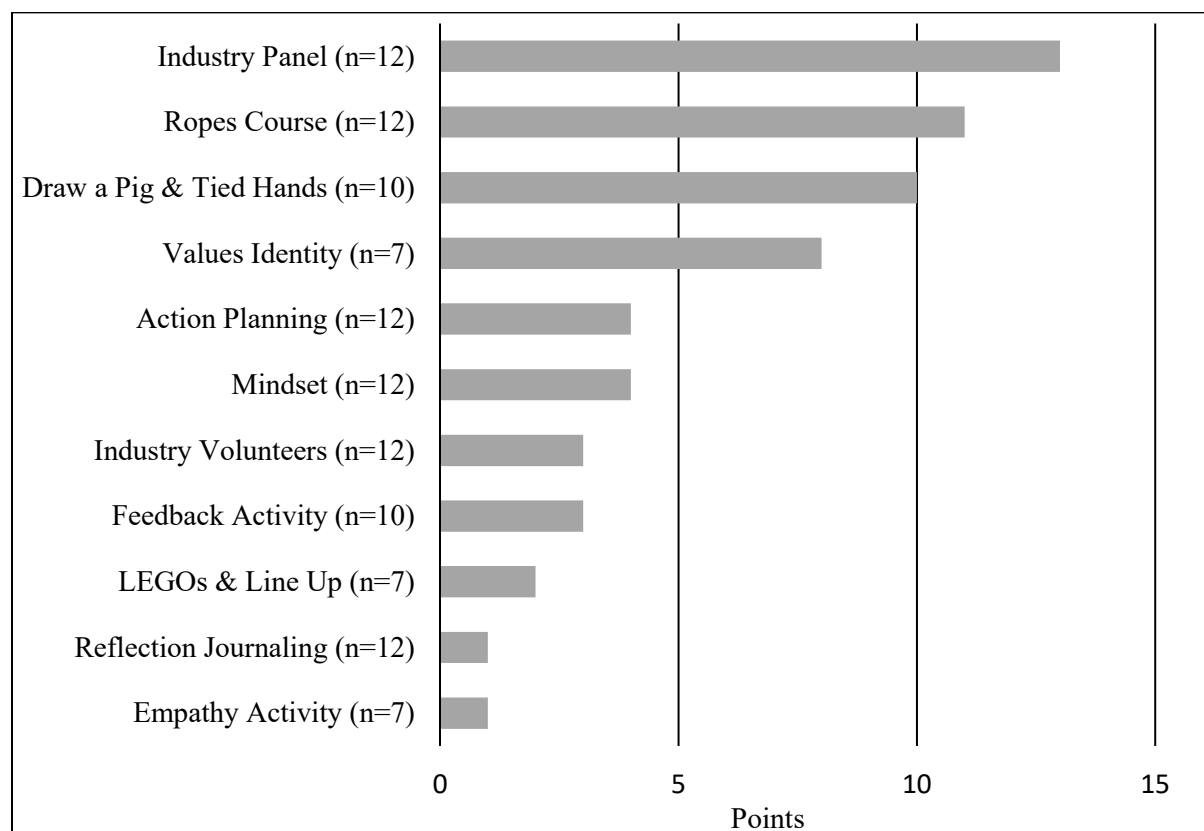
#### **Evaluation Question 1: Perceived Value of Activities**

The focus of the first evaluation question was examining the extent to which the activities were perceived to be valuable. This was addressed through two main areas. First, participants were asked for feedback on specific activities using the ranking item and activity assessment items. Second, feedback was garnered regarding the overall BOLD STEPS experience, largely through the phone interviews. This included questions about expectations of the program, program structure, and favorite and least favorite aspects of BOLD STEPS.

**Activity ranking results.** Responses to the activity ranking item were analyzed using a point system, such that activities received three points each time they were ranked first, two



points for being ranked second, and one point for a ranking of third most engaging (see Figure 1). Note that all activities were not attended by all participants. The top activities based on rankings of engagement were Industry Panel, Ropes Course, Draw a Pig & Tied Hands, and Values Identity.



*Figure 1.* Activities ranked by level of engagement.

**Activity assessments results.** Respondents were asked to rate each activity on a series of five quantitative measures. A summary of all responses to the first quantitative measure regarding how fun each activity was is shown in Table 1. Seven of the 13 activities assessed were rated as either “fun!” or “awesome!” by at least 50% of participants: Industry Volunteers, Industry Panel 1, Ropes Course 1, Ropes Course 2, LEGOs & Line Up, Draw a Pig & Tied Hands, and Feedback Activity. The activities with the lowest fun ratings were Values Identity

and Empathy Activity with 57% and 47% of participants responding with “hated it” or “meh” ratings, respectively.

Table 1

*Frequencies and Percentages of Fun Ratings for All Activities*

Activity	Hated it	Meh	OK	Fun!	Awesome!
<i>Mindset</i>	2 (17%)	2 (17%)	4 (33%)	3 (25%)	1 (8%)
Reflection Journaling	2 (17%)	2 (17%)	5 (42%)	2 (17%)	1 (8%)
Action Planning	0 (0%)	2 (18%)	5 (46%)	2 (18%)	2 (18%)
Industry Volunteers	0 (0%)	3 (25%)	1 (8%)	5 (42%)	3 (25%)
Industry Panel 1	0 (0%)	0 (0%)	4 (31%)	7 (54%)	2 (15%)
Industry Panel 2	0 (0%)	4 (25%)	6 (38%)	4 (25%)	2 (13%)
Ropes Course 1	0 (0%)	0 (0%)	0 (0%)	7 (47%)	8 (53%)
Ropes Course 2	0 (0%)	0 (0%)	2 (13%)	10 (63%)	4 (25%)
LEGOs & Line Up	0 (0%)	1 (7%)	1 (7%)	9 (60%)	4 (27%)
Values Identity	2 (13%)	7 (44%)	5 (31%)	2 (13%)	0 (0%)
Empathy Activity	1 (8%)	5 (39%)	4 (31%)	3 (23%)	0 (0%)
Draw a Pig & Tied Hands	0 (0%)	1 (7%)	3 (20%)	8 (53%)	3 (20%)
Feedback Activity	0 (0%)	1 (6%)	3 (18%)	8 (47%)	5 (29%)

The next question assessing program activities asked participants about the perceived level of challenge each activity posed (see Table 2). All of the 13 activities assessed except for Industry Panel 1 were rated as either “good level of challenge” or “OK” by at least 50% of participants. Industry Panel 1 was rated as “pretty easy” or “way too easy” by 67% of

participants. In contrast, it is worth noting that 21% of participants considered the Empathy Activity to be “too hard or uncomfortable,” which was the highest among all activities.

Table 2

*Frequencies and Percentages of Challenge Level Ratings for All Activities*

Activity	Too hard or uncomfortable	Good level of challenge	OK	Pretty easy	Way too easy
<i>Mindset</i>	0 (0%)	4 (33%)	2 (17%)	4 (33%)	2 (17%)
Reflection Journaling	0 (0%)	4 (33%)	3 (25%)	4 (33%)	1 (8%)
Action Planning	1 (8%)	7 (58%)	3 (25%)	1 (8%)	0 (0%)
Industry Volunteers	0 (0%)	6 (50%)	2 (17%)	3 (25%)	1 (8%)
Industry Panel 1	0 (0%)	1 (8%)	3 (25%)	6 (50%)	2 (17%)
Industry Panel 2	0 (0%)	3 (19%)	6 (38%)	4 (25%)	3 (19%)
Ropes Course 1	0 (0%)	13 (87%)	1 (7%)	1 (7%)	0 (0%)
Ropes Course 2	0 (0%)	14 (88%)	2 (13%)	0 (0%)	0 (0%)
LEGOs & Line Up	0 (0%)	6 (40%)	5 (33%)	4 (27%)	0 (0%)
Values Identity	0 (0%)	2 (13%)	7 (44%)	7 (44%)	0 (0%)
Empathy Activity	3 (21%)	4 (29%)	3 (21%)	4 (29%)	0 (0%)
Draw a Pig & Tied Hands	0 (0%)	11 (73%)	2 (13%)	2 (13%)	0 (0%)
Feedback Activity	0 (0%)	14 (82%)	2 (12%)	1 (6%)	0 (0%)

Results for the third item, regarding perceived value of the activities, are shown in Table 3. All activities were perceived as either “a bit” or “definitely” valuable by at least 50% of participants. Ropes Course 1 and Feedback Activity had the largest percentage of “definitely” valuable ratings (73% and 77%, respectively). Meanwhile, 19% of participants indicated that Values Identity was a “waste of time.”

Table 3

*Frequencies and Percentages of Value Ratings for All Activities*

Activity	Waste of time	Not really	A bit	Definitely
<i>Mindset</i>	1 (8%)	1 (8%)	8 (67%)	2 (17%)
Reflection Journaling	1 (8%)	1 (8%)	8 (67%)	2 (17%)
Action Planning	0 (0%)	1 (8%)	6 (50%)	5 (42%)
Industry Volunteers	1 (8%)	0 (0%)	3 (25%)	8 (67%)
Industry Panel 1	0 (0%)	1 (8%)	6 (46%)	6 (46%)
Industry Panel 2	1 (6%)	2 (13%)	6 (38%)	7 (44%)
Ropes Course 1	0 (0%)	0 (0%)	4 (27%)	11 (73%)
Ropes Course 2	0 (0%)	2 (13%)	4 (25%)	10 (63%)
LEGOs & Line Up	0 (0%)	0 (0%)	8 (53%)	7 (47%)
Values Identity	3 (19%)	5 (31%)	7 (44%)	1 (6%)
Empathy Activity	1 (7%)	3 (20%)	5 (33%)	6 (40%)
Draw a Pig & Tied Hands	0 (0%)	0 (0%)	9 (60%)	6 (40%)
Feedback Activity	0 (0%)	1 (6%)	3 (18%)	13 (77%)

Respondents were also asked about the extent to which the activities were seen as relevant to leadership (see

Table 4 for results). For all activities, the majority of respondents (at least 50%) either “agreed” or “strongly agreed” that the activity was relevant to leadership. Values Identity received the highest percentage respondents (71%) indicating they “strongly agreed” that the activity was relevant to leadership.

Table 4

*Frequencies and Percentages of Relevancy to Leadership for All Activities*

Activity	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
<i>Mindset</i>	0 (0%)	0 (0%)	0 (0%)	8 (67%)	4 (33%)
Reflection Journaling	0 (0%)	0 (0%)	0 (0%)	8 (67%)	4 (33%)
Action Planning	0 (0%)	1 (8%)	0 (0%)	4 (33%)	7 (58%)
Industry Volunteers	0 (0%)	0 (0%)	0 (0%)	6 (50%)	6 (50%)
Industry Panel	0 (0%)	1 (8%)	0 (0%)	7 (58%)	4 (33%)
Ropes Course	0 (0%)	0 (0%)	1 (8%)	6 (50%)	5 (42%)
LEGOs & Line Up	0 (0%)	0 (0%)	1 (14%)	4 (57%)	2 (29%)
Values Identity	0 (0%)	0 (0%)	0 (0%)	2 (29%)	5 (71%)
Empathy Activity	0 (0%)	0 (0%)	1 (14%)	5 (71%)	1 (14%)
Draw a Pig & Tied Hands	0 (0%)	0 (0%)	1 (10%)	5 (50%)	4 (40%)
Feedback Activity	0 (0%)	0 (0%)	0 (0%)	7 (70%)	3 (30%)

Finally, participants were asked about the extent to which program activities helped them learn about their own leadership ability (see

Table 5). At least 50% of participants either “agreed” or “strongly agreed” for eight of the eleven activities assessed: Action Planning, Industry Volunteers, Industry Panel, Ropes Course, LEGOs & Line Up, Values Identity, Draw a Pig & Tied Hands, and Feedback Activity. The activities that received the highest percentage of “strongly agree” ratings were Values Identity (57%) and Draw a Pig & Tied Hands (40%).

Table 5

*Frequencies and Percentages of Personal Leadership Learning Ratings for All Activities*

Activity	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
<i>Mindset</i>	0 (0%)	2 (17%)	5 (42%)	4 (33%)	1 (8%)
Reflection Journaling	0 (0%)	1 (8%)	6 (50%)	3 (25%)	2 (17%)
Action Planning	0 (0%)	0 (0%)	3 (25%)	7 (58%)	2 (17%)
Industry Volunteers	0 (0%)	1 (8%)	4 (33%)	5 (42%)	2 (17%)
Industry Panel	0 (0%)	2 (17%)	3 (25%)	4 (33%)	3 (25%)
Ropes Course	0 (0%)	0 (0%)	3 (25%)	6 (50%)	3 (25%)
LEGOs & Line Up	0 (0%)	1 (14%)	1 (14%)	4 (57%)	1 (14%)
Values Identity	0 (0%)	2 (29%)	0 (0%)	1 (14%)	4 (57%)
Empathy Activity	0 (0%)	1 (14%)	4 (57%)	1 (14%)	1 (14%)
Draw a Pig & Tied Hands	0 (0%)	1 (10%)	1 (10%)	4 (40%)	4 (40%)
Feedback Activity	0 (0%)	2 (20%)	3 (30%)	4 (40%)	1 (10%)

One open-ended question was also asked for each activity. Participants were asked to describe what they learned from each activity. Overall, themes were reflective of various skills and knowledge that participants acquired from the activities. However, it is worth noting that themes expressing need for improvement or modification arose for three activities: Empathy Activity, Action Planning, and Values Identity Activity. Summaries of the themes from these questions can be found in Table 6.



Table 6

*Themes Regarding What Participants Learned from Each Activity*

Activity	Theme	Definition	Frequency
Action Planning	Achieving Goals	Learned about ways to achieve goals.	6
	Activity Ineffective	Activity was not an effective learning experience.	3
	Other	Other comments.	3
LEGOs & Line Up	Communication Problem Solving	Learned about problem solving to find different and more effective ways to communicate.	6
	Forms of Communication	Learned about alternative forms of communication.	4
	Benefits of Communication	Learned how good communication is beneficial.	3
	Other	Other comments.	3
Draw a Pig & Tied Hands	Explain Differently	Learned about explaining things in more than one way.	4
	Patience	Learned to be more patient.	3
	Other	Other comments.	7
Empathy Activity	Nothing or Didn't Participate	Did not feel comfortable participating and/or did not learn anything.	3
	Empathy is Important	Learned about the importance of empathy.	3
	Other	Other comments.	6
Feedback Activity	How to Give Feedback	Learned how to give feedback.	11

	How to Receive Feedback	Learned how to receive feedback.	5
	Other	Other comments.	3
Overall Industry Panel Activities	Real World Experiences	Learned from the shared experiences of women on the panel.	9
		<u>Sub Theme</u>	
		<i>Workplace Leadership</i> : Learned about leadership in the workplace	4
	Other	Other comments.	3
Industry Panel 1	Workplace Advice	Participants received workplace advice from the panel.	7
	Leadership	Learned more about leadership from the panel.	5
	Other	Other comments.	3
Industry Panel 2	Okay Not to Know	Learned that it is okay not to know what you want to do with your life.	5
	Work-Life Balance	Learned about the lack of work-life balance.	3
	Other	Other comments.	11
Reflection Journaling	Value of Self-Reflection	Journaling taught participants that self-reflection is valuable.	8
	Personal Preferences	Participants learned about their personal preferences regarding self-reflection.	3
	Other	Other comments.	1
<i>Mindset</i>	Growth Mindset	Participants learned about growth and fixed mindsets, particularly the benefits of growth mindset.	9
	Other	Other comments.	4

Ropes Course 1	Communication	The importance and utility of good communication in groups.	6
	Working Together	Learned about working with others as a team.	5
	Other	Other comments.	8
Ropes Course 2	Communication	The importance and utility of good communication in groups.	7
	Other	Other comments.	10
Values Identity	Personal Values	Learned about personal values and being able to identify one's own.	8
	Criticisms	Criticisms of the Values activity.	3
	Applying Values	Learned about how individuals apply values in their life.	3
	Other	Other comments.	2
Industry Volunteers	Real World Experiences	Learned about the real world from the volunteers' experiences.	3
	Leadership	Learned about using leadership in the STEM field.	3
	Other	Other comments.	5

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**General programmatic feedback.** In the pre-survey, participants were asked what they expected to gain from this leadership development experience (see Table 7). The most common theme was general leadership skills, which included comments focused on gaining non-specific leadership skills or generally becoming a better leader. Participants also expected to gain experience working with people and communication skills.

Table 7

*Themes for “What Do You Expect to Gain from This Leadership Development Experience?”*

*[Pre-Survey]*

Theme	Definition	Frequency
General Leadership Skills	Expect to gain leadership skills or become a better leader in a general sense.	14
Experience Working with People	Expect to gain experience working with people.	4
Communication Skills	Expect to gain better communication skills.	4
Other	Other comments.	3

Participants were also asked about expectations of the BOLD STEPS program during the phone interviews. Specifically, they were asked what they expected to get out of BOLD STEPS and if those expectations were met (see Table 8). A common theme was that participants expected to become better leaders. All participants who voiced this expectation also indicated that their expectations had been met. However, some participants also stated that they were unsure of their expectations.

Table 8

Themes for “What Were You Expecting to Get Out of the BOLD STEPS Program Before It Began?” [Interview]

Theme	Definition	Frequency
Become a Better Leader	Expected to become a better leader.	5
	<u>Sub Theme</u>	
	<ul style="list-style-type: none"> <li>• <i>Expectations Met</i>: Expectations for the program were met.</li> </ul>	5
Unsure of Expectations	Did not know what to expect or did not expect to get anything out of the program.	4

In the phone interviews, participants were asked to reflect on how effective it was to have BOLD STEPS programming integrated throughout their time working at the STEPS for Girls camp (see Table 9). The majority indicated that the integration with camp worked well. After a follow-up probe was used, most participants also indicated they were able to apply the skills they learned right away at the STEPS for Girls camp.

Table 9

*Themes for “How Effective Was It to Have BOLD STEPS Programming Integrated Throughout Your Time at the STEPS Camp? What Worked Well? Did You Feel Like You Were Able to Use What You Were Learning Right Away?” [Interview]*

Theme	Definition	Frequency
Integration with Camp	Integration with STEPS camp worked well.	7
Able to Apply Skills	Participants were able to apply the skills and information they learned right away.	7
Other	Other comments.	7

Next, participants in the phone interviews were asked about their favorite and least favorite aspects of the BOLD STEPS program. The main theme regarding participants’ favorite aspect of BOLD STEPS were the panel and volunteer interactions. The main theme regarding least favorite aspect was the length of sessions; some participants commented that the sessions were occasionally too long. Themes for favorite and least favorite aspects are summarized in Tables Table 10 and Table 11, respectively.

Table 10

*Themes for “What Was Your Favorite Part of the BOLD STEPS Program? Does Anything Stand Out as Being Especially Memorable or Meaningful?” [Interview]*

Theme	Definition	Frequency
Panel and Volunteer Interactions	Interactions with the industry volunteers, including panels.	4
Other	Other comments.	4

Table 11

*Themes for “What Was Your Least Favorite Part of the BOLD STEPS Program?” [Interview]*

Theme	Definition	Frequency
Length of Sessions	Sessions were too long.	3
Other	Other comments.	7

In the post-surveys and phone interviews, participants were given the opportunity to share any additional comments they had about their experience in the BOLD STEPS program (see Tables Table 12 and Table 13, respectively). In the survey question, many participants shared positive comments about BOLD STEPS. However, participants in the post-survey also shared improvement opportunities for the program. The main theme that resulted from the phone interview question was also improvement opportunities. However, no specific sub-themes arose regarding improvement opportunities for either question.

Table 12

*Themes for “Are There Any Thoughts You Would Like to Share Regarding Your Experiences with the BOLD STEPS Program?” [Post-Survey]*

Theme	Definition	Frequency
Positive Comments	General positive comments and praise for the BOLD STEPS program.	7
	<u>Sub Theme</u>	
	<ul style="list-style-type: none"> <li>• <i>Leadership</i>: The program taught participants about leadership</li> </ul>	3
Improvement Opportunities	Participants suggest opportunities for program improvement.	5

Table 13

*Themes for “Do You Have Any Other Comments You Would Like to Share About Your Experiences with the BOLD STEPS Program?” [Interview]*

Theme	Definition	Frequency
Improvement	Participants suggest opportunities for program	4
Opportunities	improvement.	
Other	Other comments.	4

### **Evaluation Question 2: Knowledge of Leadership Skills**

For evaluation question two the focus was on examining participants’ knowledge of and perceptions regarding leadership skills. Results include both quantitative and qualitative data. The Leadership Trait Importance items were asked in both the pre- and post-surveys. Participants were asked to describe leadership and leadership traits, as well as to reflect on the strategies they had learned during the BOLD STEPS program.

**Leadership trait importance results.** In the pre- and post-surveys, participants were asked to indicate the extent to which they agreed that each of a series of traits were important for leaders (see Table 14). All traits received high levels of agreement – between agree and strongly agree on average – on both the pre- and post-surveys. Only one trait increased significantly over the course of the program: able to express their appreciation of others.



Table 14

*Average Scores and T-Test Results of Pre- and Post-Survey Leadership Trait Importance*

Leadership Trait	Pre-Survey Average	Post-Survey Average	p-Value
Aware of their own strengths and weaknesses	4.33	4.58	-
Trustworthy	4.83	4.75	-
A good listener	4.83	4.92	-
Willing to take risks	4.33	4.50	-
Aware of what is important to them personally	4.00	4.33	-
Courageous	4.08	4.25	-
Able to encourage others	4.92	4.75	-
Able to share their ideas clearly	4.67	4.83	-
Able to express their appreciation of others	4.58	5.00	.017

*Note.* Only p-values above the .05 significance cut-off were included in this table.

**Qualitative results.** Participants were asked in the pre- and post-surveys to describe what leadership means to them. At the time of the pre-survey, the main themes were guiding others, recognizing a need, being a role model, and having a common goal. The themes changed slightly in the post-survey, and reflect the focus of BOLD STEPS programming. Specifically, the post-survey themes were guiding others, common goal, and helping others. See Tables Table 15 and Table 16 for summaries of the pre- and post-survey themes, respectively.

Table 15

*Themes for “What Does Leadership Mean to You?” [Pre-Survey]*

Theme	Definition	Frequency
Guiding Others	Guiding or directing a group of people.	6
Recognizing a Need	Identifying the need to a leader and stepping up.	5
Being a Role Model	Leading by example and being a role model for others.	5
Common Goal	Working toward a common goal.	4
Other	Other comments.	6

Table 16

*Themes for “What Does Leadership Mean to You?” [Post-Survey]*

Theme	Definition	Frequency
Guiding Others	Guiding or directing a group of people.	7
Common Goal	Working toward a common goal.	4
Helping Others	Leading means helping others.	3
Other	Other comments.	3

Participants were also asked to list the three most important traits or skills of a leader in the pre- and post-surveys (see Tables Table 17 and Table 18, respectively). In the pre-survey, communication was the most common theme, with listening skills as a sub-theme. Empathy, confidence, and respectful were also listed frequently by respondents in the pre-survey. Themes

were similar at the time of the post-survey; communication, empathy, and confidence arose as the main themes.

Table 17

*Themes for “Please List the Top 3 Most Important Traits or Skills of a Leader That You Can Think of.” [Pre-Survey]*

Theme	Definition	Frequency
Communication	Communication skills are important for leaders.	8
	<u>Sub Theme</u>	
	<ul style="list-style-type: none"> <li>• <i>Listening Skills:</i> Listening skills are important for leaders.</li> </ul>	4
Empathy	Empathy is important for leaders.	7
Confidence	Having confidence is important for leaders.	6
Respectful	Being respectful is important for leaders.	4
Other	Other comments.	21

Table 18

*Themes for “Please List the Top 3 Most Important Traits or Skills of a Leader That You Can Think of.” [Post-Survey]*

Theme	Definition	Frequency
Communication	Communication skills are important for leaders.	10
Empathy	Empathy is important for leaders.	7
Confidence	Having confidence is important for leaders.	4
Other	Other comments.	16

In the interviews, participants were asked about the strategies they learned to be a better leader (see Table 19). The main theme that arose was feedback, which referred to the strategies learned through the BOLD STEPS program for effectively giving feedback.

Table 19

*Themes for “What Strategies Did You Learn to Help You Be a Better Leader?” [Interview]*

Theme	Definition	Frequency
Feedback	Learned strategies for giving feedback.	3
Other	Other comments.	6

Participants were also asked in the interviews if they plan to continue growing their leadership skills (see Table 20). All responded that they do intend to continue growing their leadership skills. Most indicated they would grow their skills by applying leadership skills. In this theme, participants said they would seek out and utilize opportunities to lead others and apply the skills they learned through BOLD STEPS.

Table 20

*Themes for “Do You Plan to Continue Growing Your Leadership Skills? If so, How?”*

*[Interview]*

Theme	Definition	Frequency
Yes	Yes, participants plan to continue growing their leadership skills.	8
Applying Leadership Skills	Plan to grow skills by finding opportunities to apply them.	6
Other	Other comments.	4

### **Evaluation Question 3: Confidence in Leadership Ability**

The third evaluation question dealt with the extent to which participants felt confident in their leadership skills and whether it shifted over the course of the program. In order to address this evaluation question, participants were asked the Leadership Self-Perception items, as well as questions about personal leadership strengths, weaknesses, and perceptions of change in the phone interviews. Participants were also asked the Leadership Growth Mindset survey items.

**Leadership self-perception results.** In both the pre- and post-surveys, responses averaged near “agree.” Additionally, agreement ratings increased significantly between the pre- and post-surveys for two statements: “I am knowledgeable about good leadership” and “I see myself as a leader.” See

Table 21 for a summary of the results.

Table 21

*Average Scores and T-Test Results of Pre- and Post-Survey Leadership Self-Perception*

Statement	Pre-Survey Average	Post-Survey Average	p-Value
I see myself as a leader	4.0	4.42	.017
I am knowledgeable about good leadership	4.0	4.5	.007
I have the skills to be a leader	4.08	4.5	-

*Note.* Only p-values above the .05 significance cut-off were included in this table.

**Qualitative results.** Participants were asked to reflect on their personal strengths and weaknesses as a leader during the phone interviews. The most common themes for personal leadership strengths were communication and types of leadership (see Table 22). The participants who described communication as a strength tended to identify specific types of communication, and some indicated that BOLD STEPS programming helped them to develop this strength. The types of leadership theme dealt with learning about different roles and types of leadership and how they relate to personal strengths. Meanwhile, the main themes for personal leadership weaknesses were communication and confidence (see Table 23). Interestingly, communication arose as a theme for both strengths and personal weaknesses – although some participants who referred to it as a weakness indicated that BOLD STEPS helped them improve. The second theme, confidence, was identified as a personal need for increased confidence.

Table 22

*Themes for “What Did You Learn About Your Strengths as a Leader?” [Interview]*

Theme	Definition	Frequency
Communication	Identified communication as a personal strength.	4
Types of Leadership	Learned about different types of leadership and how they relate to personal strengths.	4
Other	Other comments.	3

Table 23

*Themes for “What Did You Learn About Your Weaknesses as a Leader?” [Interview]*

Theme	Definition	Frequency
Communication	Identified weaknesses regarding communication.	4
Confidence	Identified a need to have greater confidence.	3
Other	Other comments.	3

Participants were also asked whether the BOLD STEPS program changed their perception of themselves as leaders (see Table 24). The most common theme that arose was that leadership self-perceptions did change. Of those participants whose perceptions changed, most noted having increased confidence in their leadership abilities as a result of the program. However, another theme was that participating in the BOLD STEPS program did not change participants' perception of themselves as leaders.



Table 24

*Themes for “Do You Feel that the BOLD STEPS Program Changed Your Perception of Yourself as a Leader? Why/Why Not?” [Interview]*

Theme	Definition	Frequency
Changed Leadership Perception	BOLD STEPS program changed perception of self as a leader.	5
	<u>Sub Theme</u>	
	<ul style="list-style-type: none"> <li>• <i>Confidence in Leadership Ability:</i> Participants became more confident in their leadership abilities.</li> </ul>	4
Did Not Change Leadership Perception	BOLD STEPS program did not change participants’ perceptions of self as leader.	3

**Leadership growth mindset results.** The items on the Leadership Growth Mindset scale had both negative and positive wordings. The statement with positive phrasing – I have the ability to improve my leadership ability – approached ratings of strongly agree on average in both the pre- and post-surveys. The items with negative phrasing fared differently from one another, however. Participants disagreed on average that you can’t change your ability to lead but responded more neutrally toward the statement about leadership ability being something people are born with. Agreement ratings for the Leadership Growth Mindset items did not change significantly between the pre- and post-surveys. See Table 25 for a summary of results.

Table 25

*Average Scores and T-Test Results of Pre- and Post-Survey Leadership Growth Mindset*

Statement	Pre-Survey Average	Post-Survey Average	p-Value
I have the ability to improve my leadership ability	4.67	4.83	-
Your leadership ability is something you can't change very much	1.5	1.58	-
You can learn new things, but you can't really change your ability to lead	2.0	1.92	-
Leadership ability is something people are born with	2.83	2.67	-

*Note.* Only p-values above the .05 significance cut-off were included in this table.

**Evaluation Question 4: Perceptions of Women in Leadership**

The focus of the fourth evaluation question was how participants perceive women in leadership and whether those perceptions shifted over the course of the program. This evaluation question was assessed using the Gendered Leadership Prejudices and Leadership Trait Gender Association measures. Results from the quantitative items prompted a clarifying qualitative question that was asked at the time of the phone interviews.

**Gendered leadership prejudices results.** In both the pre- and post-surveys, respondents on average agreed that females have strong leadership skills and disagreed that males tend to be better leaders than females. Responses did not change significantly between the pre- and post-surveys. See Table 26 for a summary of the results.

Table 26

*Average Scores and T-Test Results of Pre- and Post-Survey Gendered Leadership Prejudices*

Statement	Pre-Survey Average	Post-Survey Average	p-Value
Females have strong leadership skills	4.50	4.67	-
Males tend to be better leaders than females	1.50	1.85	-

*Note.* Only p-values above the .05 significance cut-off were included in this table.

**Leadership trait gender association results.** The perceptions of most leadership traits approached “equally true of both,” on average. However, “being a good listener” and “able to express their appreciation of others” were rated as slightly more true of females, with the latter significantly increasing in favor of females in the post-survey. Meanwhile, being “willing to take risks” increased significantly in favor of males in the post-survey. See Table 27 for a summary of the results.

Table 27

*Average Scores and T-Test Results of Pre- and Post-Survey Leadership Trait Importance*

Leadership Trait	Pre-Survey Average	Post-Survey Average	p-Value
Aware of their own strengths and weaknesses	3.58	3.58	-
Trustworthy	3.25	3.67	-
A good listener	4.09	4.27	-
Willing to take risks	2.75	2.42	.039
Aware of what is important to them personally	3.42	3.67	-
Courageous	3.08	2.92	-
Able to encourage others	3.33	3.83	.007
Able to share their ideas clearly	3.08	3.42	-
Able to express their appreciation of others	3.83	4.08	-

*Note.* Only p-values above the .05 significance cut-off were included in this table.

**Qualitative results.** As a follow-up to the quantitative findings, participants were asked in the interviews whether they felt that males are more likely to take risks than females and how that impacts leadership ability (see Table 28). One main theme that resulted from this question was that risk-taking is beneficial for leaders. Participants also explained their views on gendered risk taking in terms of males taking more risks and females thinking things through. In the former theme, participants focused on their sense that males take more risks than females. In the latter, participants expressed that females make more contemplative and cautious decisions than males.

Table 28

*Themes for “Some People Feel that Males are More Likely to Take Risks than Females. Do You Agree with This? In What Ways Do You Think This Impacts Leadership Ability?” [Interview]*

Theme	Definition	Frequency
Risk-Taking Beneficial for Leaders	Risk-taking is an important and positive aspect of good leadership.	7
Males Take More Risks	Males are more likely than females to take risks.	7
Females Think Things Through	Females make more informed, cautious decisions than males	4
Other	Other comments.	9

#### **Evaluation Question 5: Perceptions of Leadership Roles**

The fifth evaluation question focused on how the participants perceived the role of leaders and whether it shifted over the course of the program. This evaluation question was addressed using the Leadership Role Perceptions survey items, in addition to an open-ended question about leadership roles in the phone interviews.

**Leadership role perceptions results.** Responses indicate that participants agree, on average, that everyone has the potential to be a leader. There were no significant changes between the pre- and post-surveys. A summary of the results is shown in Table 29.

Table 29

*Average Scores and T-Test Results of Pre- and Post-Survey Gendered Leadership Prejudices*

Statement	Pre-Survey Average	Post-Survey Average	p-Value
It is okay for freshmen on a team to offer suggestions to the team captain	4.50	4.67	-
I don't have leadership responsibilities unless I am chosen to be a leader	2.08	2.42	-
Students can be leaders in a classroom	4.33	4.58	-

*Note.* Only p-values above the .05 significance cut-off were included in this table.

**Qualitative results.** In the interviews, participants were asked if they felt that everyone has a leadership role, no matter their current position. All participants indicated that, yes, everyone has the potential for leadership in their current role. Themes of role modeling and horizontal leadership arose as examples. See Table 30 for a summary of the themes.

Table 30

*Themes for “Do You Feel that Everyone Has a Leadership Role, No Matter Their Current Position? Why/Why Not?” [Interview]*

Theme	Definition	Frequency
Everyone has a Leadership Role	Yes, everyone has a leadership role regardless of hierarchical position.	8
<u>Sub Themes</u>		
	<ul style="list-style-type: none"> <li>• <i>Role Modeling</i>: Individuals are always or can always be role models for others.</li> <li>• <i>Horizontal Leadership</i>: Individuals can lead others who are in the same position as themselves</li> </ul>	6  3

## **Chapter IV: Discussion and Recommendations**

This evaluation of the BOLD STEPS program utilized qualitative and quantitative data to address five main evaluation questions. The following section will discuss the interpretation and implications of the evaluation results. Conclusions and recommendations for the BOLD STEPS program directors will follow.

### **Evaluation Question 1: Perceived Value of Activities**

Evaluation question 1 dealt with the participants' perceived value of the BOLD STEPS program activities. Results on the various activity-related metrics ranged. Despite having somewhat lower scores on a number of questions, the Industry Panel was a top ranked activity and also had numerous qualitative responses identifying it as a favorite aspect of the BOLD STEPS programming. The Ropes Challenge Course and Draw a Pig & Tied Hands were also highly regarded across nearly all metrics. Despite a lower rank, the Feedback Activity was also well received. Furthermore, feedback skills were identified as a memorable leadership strategy in the phone interviews.

Exposure to role models can be a positive experience for young women, and the results of this evaluation suggest that the industry panel activity was successful in that attempt. Asgari, Dasgupta, and Stout (2012) found that exposure to successful women who participants perceive as similar to themselves can have the effect of increasing career aspirations and implicit beliefs about one's own leadership attributes among young women. Role models, however, must be used carefully; exposure to successful women who are seen as highly elite or very dissimilar to one's self can result in lower career and leadership aspirations, as well as higher feelings of inferiority (Asgari, Dasgupta & Stout, 2012; Hoyt & Simon, 2011). Although perceptions of similarity were not tested in this evaluation, the fact that volunteers on the industry panels were



largely local community members suggests that participants likely found them relatable and saw their success as personally achievable.

The two activities with the consistently lowest participant reviews were the Empathy Activity and Reflection Journaling. The Empathy Activity received the highest percentage of “too hard or uncomfortable” ratings, and a number of the qualitative comments also reflected this discomfort. Reflection Journaling also had relatively low ratings overall. Based on the qualitative responses participants may not find have found as much value in journaling relative to other forms of reflection, such as discussions or thinking internally.

### **Evaluation Question 2: Knowledge of Leadership Skills**

The second evaluation question focused on participants’ knowledge of leadership skills and whether or not they gained knowledge from BOLD STEPS. The results of this evaluation suggest that participants entered the program with high levels of knowledge about leadership and essential leadership traits, which did not change over time. Because participation in the BOLD STEPS program was tied to working in a leadership role at the STEPS for Girls camp it is likely that individuals with pre-existing leadership knowledge and experience were both more apt to apply and to be selected into the program.

However, participants did gain knowledge in one key area: feedback. Participants were significantly more likely to see being able to express appreciation of others as an essential leadership trait after the BOLD STEPS program, and many highlighted feedback strategies as a memorable leadership skill that they learned. Participants also indicated that they intend to continue growing as leaders in the future. Tactics to continue growing tended to be vague, however, with most participants indicating that they would grow by applying the skills learned at the BOLD STEPS program.

### **Evaluation Question 3: Confidence in Leadership Ability**

The third question assessed in this evaluation was in regards to the participants' confidence in their own leadership ability and whether confidence increased over time. The results of this evaluation provide evidence for high confidence among participants prior to the BOLD STEPS program, as well as significant growth in confidence levels after the program. In other words, despite entering the program confident in their leadership ability, the BOLD STEPS program had the effect of increasing that confidence. Many participants also stated that the program changed their leadership self-perception.

Participants also tended to have growth mindsets in regard to their leadership ability, and were able to identify personal strengths and weaknesses in regards to leadership skills. Haber-Curran and Sulpizio (2017) suggest that leadership development programs for young women should focus on leadership as a capacity to be developed, rather than a trait. The leaders of the BOLD STEPS program addressed this issue by having participants read *Mindset: The New Psychology of Success* (Dweck, 2016). However, leadership-centered growth mindset did not change across time and one participant indicated that she was previously familiar with the information in the book. Familiarity with growth mindset may explain why the BOLD STEPS program was unable to increase participants' growth mindsets regarding leadership.

### **Evaluation Question 4: Perceptions of Women in Leadership**

The fourth evaluation question focused on how participants perceived women in leadership and whether or not those perceptions changed during the course of the BOLD STEPS program. Both before and after the program, participants perceived women to be strong leaders. Participants tended to associate leadership traits with men and women fairly equally. Somewhat unsurprisingly, being "a good listener" was more strongly associated with women at both time

points. In contrast, being “willing to take risks” was more strongly associated with men during the post-survey. In favor of future use of the program, being “able to encourage others” became more strongly associated with women at the time of the post-survey.

One tactic employed by leaders of the BOLD STEPS program, which has been recommended in leadership development literature (Ely et al., 2011; Haber-Curran & Sulpizio, 2017), was to encourage participants to embrace femininity as a leader. The program highlighted the importance of traditionally feminine, more communal traits, such as the ability to encourage others. The results suggest that participants were positively influenced by these efforts; at the time of the post-survey, participants were more likely to recognize the ability to express appreciation of others as an essential leadership trait and also more strongly associated the ability to encourage others with females as opposed to males.

#### **Evaluation Question 5: Perceptions of Leadership Roles**

The fifth and final evaluation question dealt with how participants perceive the role of leadership, particularly in different hierarchical positions. Participants perceived that everyone has the potential to be a leader, regardless of their current position. High agreement levels with the Leadership Role Perceptions scale at the time of the pre-survey suggest that participants entered the program with this perspective and there was little BOLD STEPS could have done to increase it. Nonetheless, Haber-Curran and Sulpizio (2017) argue that leadership development programs for young women should emphasize leadership more as an action than an acquired authority role. Thus, helping participants to maintain this perspective is a positive outcome.

#### **Limitations**

This study had a number of limitations that could impact the quality of results. First, participant concerns about confidentiality may have limited the researcher’s ability to collect

honest responses. Participants may have responded differently to paper surveys they knew would be seen by the program directors compared to online surveys on which they were guaranteed confidentiality. The small cohort size may also have played a role in confidentiality concerns and hindered free expression of opinions. Additionally, participants may simply have doubted or misunderstood the promises of confidentiality.

In addition to having a possible impact on confidentiality concerns, the small size of the cohort also reduces the evaluator's ability to draw conclusions from the results. Detecting changes through statistical significance is difficult with small sample sizes, which means that this evaluation could have missed changes caused by the BOLD STEPS program. A small sample size also makes qualitative data more difficult to analyze because themes can only emerge when three or more participants express similar statements.

Differing delivery of the questionnaire materials is also a limitation. Specifically, there was a lack of consistency in when and how data about the activities was collected. For some activities, data was collected in-person by the program directors immediately following the activity. For others, data was collected weeks later via online survey. This means that activities were assessed at different time points and in different avenues; opinions may have been impacted differentially by memory, context, and intermediary events.

There were also limitations associated with the data collection measures themselves. This study relied on self-reported measures of perceived leadership ability. Validated measures of leadership ability or ratings from a third party could lend stronger evidence regarding the impact of the program on actual leadership ability. The simple self-perception measures this evaluation used do, however, help assess the programmatic goal of building confidence. An additional limitation was that some items designed to assess program activities utilized non-Likert-type

scales. These scales were written with intentions to appeal to the participants, but were more difficult to interpret than true Likert-type scales due to having unequal distances between scale points.

Finally, participants in the BOLD STEPS program had different experiences depending on when and for how long they attended. This evaluation includes data from 2 participants who attended only the first two weeks, 5 who attended only the last two weeks, and 5 who attended all four weeks. The small sample sizes of each group makes it impractical to examine whether the time period during which participants attended BOLD STEPS resulted in significantly different outcomes. These differing experiences make it difficult to ascertain which aspects of the BOLD STEPS program were more or less effective.

### **Overall Programmatic Feedback and Recommendations**

Participants gave generally positive feedback regarding the overall BOLD STEPS experience. Most indicated that their expectations for the program were met and liked that the program was integrated with the STEPS for Girls summer camp, such that they could immediately utilize what they learned. Providing the opportunity for young women to engage in positions of leadership aligns closely with Haber-Curran and Sulpizio's (2017) description of best practices for leadership development among young women. However, some participants expressed that they did not know what to expect from the program and there were some negative comments regarding the length of some program sessions. This suggests that integrating BOLD STEPS programming with the STEPS for Girls camp had both negative and positive aspects: while the arrangement allowed participants to use their skills immediately, it also resulted in very long days. Some participants stated that it was difficult to focus on BOLD STEPS activities after spending a full day working with the STEPS campers.

Based on this evaluation, leaders of the BOLD STEPS program should maintain the core program components and continue to integrate programming into the STEPS for Girls camp experience. However, efforts should be made to introduce new participants to the program in such a way that they have a clearer understanding about the intentions of the program. Efforts should also be made to decrease the length of sessions so participants can stay mentally engaged. If possible, it may also be beneficial to provide different activities to participants based on age or past leadership experience. Although not a theme, the evaluator noted that some participants felt the activities were not always universally appropriate or meaningful. Changing to a more open format where participants are allowed to select sessions of interest may help alleviate issues with length and personal relevance. Finally, BOLD administrators should work to develop action plans with participants so they have clearer goals for developing their leadership abilities outside the program.

In terms of program activities, four received the most positive feedback overall and should remain in future iterations of the BOLD STEPS program: Industry Panel, Ropes Challenge Course, Communication Activity: Draw a Pig & Tied Hands, and Feedback Activity. However, BOLD STEPS leadership should reconsider two activities in particular: Reflection Journaling and the Empathy Activity. The lasting discomfort expressed by some participants suggests that replacing or significantly modifying the Empathy Activity may be the best course of action. In order to better account for personal preference, Reflection Journaling could be replaced by more group discussions and instruction on how to effectively journal rather than mandating journaling. Additionally, it may be worthwhile to do a session on growth mindset rather than having participants read the entire book; it was not rated very highly and results showed that participants entered the program with mindsets that were already growth oriented.

Finally, BOLD STEPS leaders should continue to base their programming on the best practices outlined by Haber-Curran and Sulpizio (2017). As discussed in the previous sections, the BOLD STEPS program and topics align closely with many of those recommended by Haber-Curran and Sulpizio (2017). In this way, the program succeeded at being informed by the literature. However, the BOLD STEPS program could potentially benefit from an increased focus on “emphasizing voice, power, and self-esteem” (Haber-Curran & Sulpizio, 2017). BOLD STEPS succeeded at increasing participants’ confidence in their leadership ability, but participants may also benefit from a broader focus on increasing confidence and self-esteem in a more general sense.

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### Appendix A: Pre-Post Survey

1. What do you expect to gain from this leadership development experience? (*Asked only in the pre-survey*)
2. What does leadership mean to you?
3. Please list the top 3 most important traits or skills of a leader that you can think of.

4. Please indicate how much you agree or disagree with each of the following statements:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I see myself as a leader	1	2	3	4	5
I have the ability to improve my leadership skills	1	2	3	4	5
Females have strong leadership skills	1	2	3	4	5
It is okay for freshmen on a team to offer suggestions to the team captain	1	2	3	4	5
Your leadership ability is something you can't change very much	1	2	3	4	5
I am knowledgeable about good leadership	1	2	3	4	5
I have the skills to be a leader	1	2	3	4	5
You can learn new things, but you can't really change your ability to lead	1	2	3	4	5
I don't have leadership responsibilities unless I am chosen to be a leader	1	2	3	4	5
Males tend to be better leaders than females	1	2	3	4	5
Leadership ability is something people are born with	1	2	3	4	5
Students can be leaders in a classroom	1	2	3	4	5

5. Please indicate how much you agree or disagree that the following traits are important for leadership. It is essential for a leader to be...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Aware of their own strengths and weaknesses	1	2	3	4	5
Trustworthy	1	2	3	4	5
A good listener	1	2	3	4	5
Willing to take risks	1	2	3	4	5
Aware of what is important to them personally	1	2	3	4	5
Courageous	1	2	3	4	5
Able to encourage others	1	2	3	4	5
Able to share their ideas clearly	1	2	3	4	5
Able to express their appreciation of others	1	2	3	4	5

6. Please indicate whether you feel each trait is more true of males or more true of females:

	Much more true of males	Slightly more true of males	Equally true of both	Slightly more true of females	Much more true of females
Aware of their own strengths and weaknesses	1	2	3	4	5
Trustworthy	1	2	3	4	5
A good listener	1	2	3	4	5
Willing to take risks	1	2	3	4	5
Aware of what is important to them personally	1	2	3	4	5
Courageous	1	2	3	4	5
Able to encourage others	1	2	3	4	5
Able to share their ideas clearly	1	2	3	4	5
Able to express their appreciation of others	1	2	3	4	5

7. Which three activities did you find most engaging? Please rank the top three, with number one being the most engaging. Note that you may not have been present for all of the activities listed below. (*Asked only in the post-survey*)

- a. Mindset: The New Psychology of Success
- b. Reflection Journaling
- c. Action Planning
- d. Industry Volunteer Involvement
- e. Industry Panel
- f. Ropes Challenge Course
- g. Communication Activity on Saturday, July 7th (LEGOs and Line Up)

- h. Values Identity Activity on Wednesday, July 11<sup>th</sup>
  - i. Empathy Activity on Wednesday, July 11<sup>th</sup>
  - j. Communication Activity on Saturday, July 21st (Draw a pig and Tied hands)
  - k. Feedback Activity on Saturday, July 24th
8. Are there any other thoughts you would like to share regarding your experiences with the BOLD STEPS program? (*Asked only in the post-survey*)

9. Age: \_\_\_\_\_

10. What year will you be in school this upcoming fall?

- High school junior
- High school senior
- College freshman
- College sophomore
- College junior
- College senior

11. What position will/did you have at the STEPS summer camp?

- Lab assistant
- Counselor
- Other, please specify: \_\_\_\_\_

12. First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

Please note that this information will only be used to match your responses on this survey to the survey you took at the beginning of STEPS camp / you will take at the end of STEPS camp. Your responses on both surveys are completely confidential – no one but the research team will know what you said individually.

13. We would like to do a phone interview about your experience with the BOLD STEPS program. The interview will take about 30 minutes, and you will get a \$10 gift card for participating. Would you be willing to be contacted by the researcher to set up a phone-interview? (*Asked only in the post-survey*)

- Yes, you can contact me about the phone interview!
- No, please do not contact me.

Even if you select “yes” today, you are always free to change your mind.

*If yes selected:*

14. Please provide an email address and phone number for the researcher, Aleyna Hunt, to contact you at:

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

15. How would you prefer to be contacted?

- Phone call
- Text message
- Email

## Appendix B: Activity Survey

Please think about your experience [with X activity].

1. Was this activity fun?
  - Awesome!
  - Fun!
  - OK
  - Meh
  - Hated it
2. Did you feel this activity challenged you? (Pushed your boundaries, pushed you outside your comfort zone, etc)
  - Too hard or uncomfortable
  - Good level of challenge
  - OK
  - Pretty easy
  - Way too easy
3. Did you find value in this activity?
  - Definitely
  - A bit
  - Not really
  - Waste of time
4. How much do you agree or disagree with each of the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I understand how this activity was related to leadership	1	2	3	4	5
This activity helped me learn about my own leadership ability	1	2	3	4	5

5. What did you learn from this activity?

## Appendix C: Phone Interview

### Introduction:

Hi, \_\_\_\_\_. This is Aleyna Hunt, calling about the interview we scheduled about the BOLD STEPS program. It should take around 30 minutes and I will mail you a \$10 Amazon gift card when we are finished! Is now still a good time?

“No” – Okay, let’s reschedule something..... (if appropriate)

“Yes” – Great! I sent you a consent form earlier, but I want to go over the information with you briefly before we begin. First, please know that you are allowed to end the interview at any time or skip any question that you do not feel comfortable answering. Your honest responses are really important and appreciated, and your responses to my questions will be completely confidential. The feedback you provide will help BOLD STEPS improve their program in the future. I will be recording the interview today, but after I transcribe our conversation I will delete the recording. When I give a report to BOLD STEPS about the results of these interviews, your name and personal details will be removed so that they don’t know who participated in the interviews or what you said individually.

Do you have any questions?

Do you consent to being interviewed today and having your interview recorded?

“No” – Okay, thank you for your time!

“Yes” – Great, thank you! Let’s begin. I’m starting the recording now.

### Questions:

What was your favorite part of the BOLD STEPS program? Does anything stand out as being especially memorable or meaningful?

What was your least favorite part of the BOLD STEPS program?

How effective was it to have BOLD STEPS programming integrated throughout your time at the STEPS camp?

-What worked well?

-What didn’t work so well?

-Did you feel like you were able to use what you were learning right away?

What were you expecting to get out of the BOLD STEPS program before it began?

-Were your expectations met?

What did you learn about your strengths as a leader?

What did you learn about your weaknesses as a leader?

What strategies did you learn to help you be a better leader?

Do you plan to continue growing your leadership skills? If so, how?

Do you feel that the BOLD STEPS program changed your perception of yourself as a leader?

Why/why not?

Some people feel that males are more likely to take risks than females. Do you agree with this?

In what ways do you think this impacts leadership ability?

Do you feel that everyone has a leadership role, no matter their current position? Why/why not?

Do you have any other comments you’d like to share about your experiences with the BOLD STEPS program?

### Debrief:



That is all of my questions for you today. Do you have any questions for me about the research before I let you go?

Okay, thank you for your time! I will send you the \$10 gift card within the next two weeks.