Examining Year-long Leadership Gains in FFA Members by Prior FFA Involvement, Class Year, and Gender

David Rosch[1], Jon C. Simonsen[2], and Jonathan J. Velez[3]

Abstract

Students (N = 160) in three diverse FFA chapters were surveyed in early fall, midwinter, and late spring in regard to their leadership skills, confidence in leading, and motivation to engage in leadership-oriented behaviors. The results indicated small-to-moderate gains in transformational leadership skill and a marginally significant small-to-moderate decrease in "social-normative" motivation to lead, i.e., motivation based on a feeling of responsibility towards one's organization. Further analysis revealed that students exhibit a moderate decrease in non-calculative motivation to lead in the spring semester. Female students made significant gains in transformational leadership skill and marginally significant gains in their leadership self-efficacy and transactional leadership skill as well as showed a decrease in their social normative motivation to lead. No changes emerged in the male students. Analysis by class year showed that juniors in high school made larger gains in overall capacity than in other class years, especially in their confidence in leading their peers. Prior FFA involvement did not emerge as a significant predictor of leadership development. These results imply the need for focused training of FFA advisors in regard to the leadership growth of students and, potentially, in the administration of opportunities for leadership.

Keywords: FFA Involvement, Leadership Development, Leadership Self-Efficacy, Motivation, Student Advising

The fundamental goal of member leadership development in the National FFA Organization can be seen in its mission statement, motto, and code of ethics, and the organization has played a role in developing student leaders for over 85 years (National FFA Organization, 2014). This focus on leadership will continue to be a vital charge for years to come, as leadership is essential to building a positive society (Kouzes & Posner, 2007).

The FFA Organization has over 500,000 members who engage in a multitude of leadership activities every year (National FFA Organization, 2014). These activities range from leading community service projects at the local level to participating in competitive skill events at the national level. Its huge student membership affords the organization an unparalleled opportunity for leadership development of students at the secondary level. The membership continues to grow, and opportunities evolve to address the changing demographics of students in the FFA.

Leadership research on the FFA has often been based on its use of traditional skill development and leadership roles within FFA chapters. Over the past few decades, however, the conceptualization of leadership across many fields and disciplines has changed (Kezar, Carducci,

---

[1] David Rosch is an Assistant Professor of Leadership Studies in the Agricultural Education Program at the University of Illinois at Urbana-Champaign, 137 Bevier Hall, Urbana, IL 61801, dmrosch@illinois.edu.

[2] Jon Simonsen is an Assistant Professor in the Department of Agricultural Education at the University of Missouri, 125A Gentry Hall, Columbia, MO, 65211. Email: simonsenj@missouri.edu.

[3] Jonathan J. Velez is an Associate Professor in the Department of Agricultural Education and Agricultural Sciences Department at Oregon State University, 112 Strand Agriculture Hall, Corvallis, OR 97331, Jonathan.Velez@oregonstate.edu.

& Contreras-McGavin, 2006). Traditional approaches to leadership development in the industrial era focused on hierarchical and one-way practices of leadership, while more modern approaches emphasize multidirectional and process-oriented practices (Komives, Wagner, and Associates, 2009). It has become increasingly evident that, as higher education and society acknowledge post-industrial models of leadership (Keating, Rosch, & Burgoon, 2014), FFA research should view leadership through a similar perspective.

Research has provided evidence that students involved in the FFA gain increased leadership skills (Dormody & Seevers, 1994; Ricketts & Newcomb, 1984; Rutherford, Townsend, Briers, Cummins, & Conrad, 2002; Stewart, Smith, Ehlert & Mihalevich, 1985; Wingenbach & Kahler, 1997). Much of this work was centered on traditional leadership roles and the associated transactional skills and abilities. Although the FFA organization has changed and includes a growing membership and increased female participation, there is still limited research that moves beyond mere skill assessment to additionally focus on students' willingness and readiness to lead. Thus, prior research provides an incomplete picture of current students' comprehensive leadership capacity and leadership gains learned through participation in the organization. To better understand the role of the FFA in developing the next generation of student leaders, a more contemporary and comprehensive inquiry into leadership development was warranted.

Conceptual Model of Comprehensive Leadership Development

Many newer models of leadership have de-emphasized a traditional structure of positional leaders who command and control followers. Instead, in the newest models, leaders are seen as emerging throughout an organization and possessing the capacity to collaborate with others in ethical and authentic ways to accomplish common goals that serve both the organization and the greater society. The older model, described as an "industrial" model of leadership (Rost, 1993), has long since yielded to latter, the "post-industrial" model of leadership (Faris & Outcalt, 2001; Rost, 1993). Although no research exists on national-scale leadership models taught at the secondary education level, a recent study (Owen, 2012) showed that over 80% of college campuses employed specific leadership education models that can be described as post-industrial in their framework.

To become effective as a leader within a post-industrial framework, leaders should possess a certain degree of skill in inspiring others, developing collaborative relationships, and organizing teams to efficiently achieve common goals. The model of transformational leadership currently serves as the most common model of post-industrial leadership in research and practice today (Dinh et al., 2014). The model divides these skills into two distinct areas: *transformational* skills, which involve inspiring others, developing authentic relationships with team members, and acting in ethical ways to achieve societally beneficial goals, and *transactional* skills, which involve organizing others and creating an effective means of rewards for accomplishing stated objectives (i.e., building a "transaction" system of rewards for performance). Leaders in contemporary organizations must possess both sets of skills if they wish to successfully lead in sustainable ways.

Post-industrial leaders also should retain a degree of leadership self-efficacy, defined as confidence that their expressed leadership behaviors will be successful within group settings (Hannah, Avolio, Luthans, & Harms, 2008; Murphy, 1992). In addition, leaders should possess an elevated level of motivation to lead. Motivation to engage in leadership behaviors can stem from three areas (Chan & Drasgow, 2001): affective-identity, non-calculative, and social-normative. Affective-identity motivation to lead is founded in one's own self-concept as a leader (i.e., "I lead because I am a leader"). Non-calculative motivation to lead arises from one's energy and enthusiasm to engage in the responsibility of leadership even if such actions do not personally benefit him or her (i.e., "I withhold a calculation of personal benefit from my decision to lead"). Social-normative motivation to lead stems from an individual's felt sense of responsibility to his or her group to lead (i.e., "I lead because my group expects me to do so").

For students to possess a comprehensive capacity to lead, and therefore express behaviors and actions consistent with effective leadership, they must possess a combination of the skills, confidence, and motivation to lead, as described above. Keating et al. (2014) described this combination as the *Ready, Willing, and Able* model of leadership readiness, in which self-efficacy (*Ready*), motivation (*Willing*), and skills (*Able*) are all necessarily applied for the effective practice of leadership development in students (Figure 1).

The *Ready, Willing, and Able* Leader

Figure 1. The Ready, Willing, and Able Model of Leader Readiness.

Theoretical Framework of Leadership Development through FFA Involvement

We situated our model of leadership development within a theoretical model of engagement originally developed by Astin (1993) which he titled an "Input-Environment-Outcome" (I-E-O) framework designed to measure the impact of experiences on measured growth. Within the model, students are assumed to bring a background of experiences and perspectives to any activity – their "input." Over the course of participation within the activity, the "environment" acts on their level of development, resulting in an "outcome" of capacity at the conclusion of the activity. This framework was developed to account for students' vast diversity of incoming capacity when measuring the degree to which an experience has an effect on them (Astin), and serves as the conceptual model for leadership assessment within the collegiate Multi-Institutional Study of Leadership (Dugan & Komives, 2010). Within this framework, FFA members' incoming leadership capacity – organized by our conceptual *Ready, Willing and* Able model – served as our independent variables, while their outgoing capacities served as our dependent variables. FFA involvement, within this model, served as the "environment" within which we were measuring impact.

The learning environment within an FFA chapter would seem an ideal space for study of how involvement in its respective activities result in development of leadership capacity. The concrete leadership experiences provide students with the necessary testing ground to develop and hone essential leadership skills and to reflect on the outcomes, motivations, and confidence needed to lead. As would be expected, research demonstrates an increase in leadership development skills possessed by FFA members in comparison to other students (Ricketts & Newcomb, 1984) and a heightened level of leadership self-perceptions held by FFA students who are in traditional leadership roles (Brick, 1998; Carter & Spotanski, 1989; Mullins & Weeks, 2006; Rutherford et al., 2002).

It should be noted that some past research on the FFA has uncovered differences between males and females in relation to their leadership development (Brick, 1998; Dormondy & Severs, 1994; Ricketts, Osborne, & Rudd, 2004; Wingenbach & Kahler, 1997). Research by Dormody and Severs and Wingenbach and Kahler indicated that female FFA members possessed greater youth leadership life skills than did their male counterparts. Ricketts et al. found that males and females held similar high levels of motivation but that females were more willing to take charge, while male students preferred to remain within their comfort zones. Further, Brick determined that female FFA members held stronger self-perceptions of their leadership abilities than did male FFA members. None of these research efforts, however, employed a longitudinal research design. Therefore, further current research that explores how FFA contributes to its' members growth over the course of an academic year is warranted.

Research Questions

Our research represents an effort to examine the development of yearlong leadership capacity gains in youth leaders who are actively engaged in their high school FFA chapter. We studied the impact of a secondary program of agriculture, as called for in the *American Association for Agricultural Education's National Research Agenda* (Doerfert, 2011). To this end, we addressed the following research questions:

1. Over an academic year, to what extent do involved FFA students make gains in their leadership skills, confidence in leading, or motivation to engage in leadership behaviors?
2. If gains occur, to what extent do they emerge at particular points in the year relevant to the FFA activity calendar?
3. To what extent is prior FFA involvement associated with leadership capacity gains in FFA chapters?
4. To what extent is a student's gender associated with leadership capacity gains in FFA chapters?

Methods

Population and Sample

We conducted this research throughout the 2012-2013 academic year with three geographically diverse and representative FFA chapters in [State]. Chapter 1, located in the central part of the state, is large (over 120 active members), rural, and well established in that it has maintained a continuously active FFA chapter for several decades. Chapter 2, located in the northwest part of the state, is small (fewer than 20 members), suburban (located within 15 miles of a small city), and has been continuously active in the FFA for more than two decades. Chapter 3, located in the southwest part of the state, is small, rural, and has been active in the FFA for less than five years. Each chapter was advised by the school's agriculture teacher, and all chapters participated in numerous annual FFA activities. For this exploratory study, we identified these chapters as representative of FFA and therefore worthy of analysis. Taken together, the sample

was inclusive of rural and more suburban chapters, larger chapters and smaller; as well as more established chapters and those relatively newly established. Taken as a whole, these chapters included aspects found in most FFA chapters nationally. In Chapter 1, 131 members participated, while 14 each in Chapters 2 and 3 also completed the study. These numbers represent more than 90% of the active membership within each chapter.

Of the 160 participating students, 45% ($n = 72$) self-identified as female, 44% ($n = 71$) as male, and 11% ($n = 17$) did not identify their gender. More than 97% ($n = 138$) of the students who reported a racial identity self-identified as White/Caucasian. The student sample was almost evenly spread over class years; 22% self-identified as freshmen, 25% as sophomores, 21% as juniors, and 32% as seniors. The sample included a range of prior FFA involvement; 36% of participants self-reported "no involvement" or "very little involvement" in response to the survey item, "What best describes your involvement in the FFA prior to this academic year?" By contrast, 29% reported "lots" or "really deep" prior involvement. The remainder reported a "moderate" amount of past FFA involvement. The correlation between class year and prior FFA involvement was statistically significant ($r = .39, p < .05$), signifying that an increase in class year was associated with an increase in prior FFA involvement. Nevertheless, such an *r*-value indicates that only 15% of the variance between the two variables was shared. Even though the two factors were related, this should not be taken to mean that older students consistently displayed a higher degree of prior involvement as compared to younger participants.

Variables and Instrumentation

The goal of this study was to describe the comprehensive leadership development of actively engaged FFA members by utilizing the *Ready, Willing, and Able* theoretical model of leader readiness that includes skills, confidence, and motivation. Thus, research participants completed a survey questionnaire that included scales of leadership skill, motivation to lead, and leadership self-efficacy. To measure skill, we used the Leader Behavior Scale (LBS; Podsakoff, MacKenzie, Moorman, & Fetter, 1990), a popular and non-copyrighted 28-item instrument designed to measure aspects of transformational and transactional leadership. A sample item for transformational behavior was, "I help other group members develop a team attitude and spirit among ourselves." A sample item for transactional leadership was, "I always give positive feedback when other group members perform well." Item responses had a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." We chose the LBS due to its use for many years as a broad measure of transformational leadership unassociated with the narrower Full-range Transformational Leadership Model and its respective Multifactor Leadership Questionnaire (Bass & Avolio, 1997). Given that FFA chapters do not include the Full-Range model in their leadership development curriculum, we felt that, given its more inclusive nature, the LBS was a more appropriate measure for this study. The LBS has been in use for more than 20 years as a psychometric tool for measuring transformational and transactional leadership skill in both business and education settings (Yukl, 2010) and has undergone extensive psychometric examination, with Cronbach reliabilities historically ranging from .71 to .89 for each scale (Yukl).

Leadership self-efficacy was measured using the Self-Efficacy for Leadership (SEL) scale, an 8-item measure of a person's confidence in engaging in leadership behaviors (Murphy, 1992). The SEL has been used for 20 years in business and educational environments and, similar to the LBS and MTL, has undergone extensive psychometric examination (Hoyt, 2005). A sample item is, "I know how to encourage good group performance." Item responses had a 5-point Likert-scale, ranging from "strongly disagree" to "strongly agree." Research has shown that Cronbach reliability is historically good, i.e., above .76 (Murphy & Ensher, 1999), and the scale possessed discriminant validity with measures of generalized self-esteem and convergent validity with past reported leadership experiences (Hoyt, 2005).

Student participants also completed the Motivation To Lead (MTL) scale, a 27-item measure equally divided across measures of affective-identity (AI), non-calculative (NC), and social-normative (SN) motivations to lead (Chan & Drasgow, 2001). The MTL assesses the degree to which people feel "called" to lead as well as the pressure they perceive and energy they possess to engage in leadership behaviors. The AI scale measures the degree to which an individual is personally drawn to leadership roles and includes items such as, "Most of the time, I prefer being a leader rather than a follower when working in a group." The NC scale measures the degree to which a person avoids rationally calculating the individual costs and benefits of holding a leadership position and includes items such as, "I never expect to get more privileges if I agree to lead a group." The SN scale is used to determine the degree to which a person leads due to a sense of duty or responsibility to others and includes items such as, "People should volunteer to lead rather than wait for others to ask or vote for them." Responses were based on a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree." The scale has been used primarily in business and public organizations and has alpha reliabilities ranging from a low of .65 for the NC scale to a high of .91 for the AI scale. The MTL had recently been extended to the agricultural education field as a tool to measure student leadership development (Rosch, 2014).

In the fall term, when completing the survey instrument for the first time, the students also completed a number of items related to their social identity and past FFA involvement. These items were not included in subsequent iterations of the survey administered during the remainder of the 2012-2013 academic year.

Data Collection

Data were collected at three points during the course of the 2012-2013 year. Participants completed a pre-test that assessed their leadership capacity prior to the current year, as well as their self-reported leadership history and gender, in the early fall (mid- to-late-September). They then completed a mid-year assessment of their leadership capacity in early January, one week after the December/January break concluded. Finally, participants completed a year-end post-test of their capacity gains in April, after most of the leadership development initiatives within their chapter had been completed. Members who missed a phase of the research were not included in the results reported; these represented most of the non-participants within each chapter. If a participant completed over 90% of the overall survey instrument and 90% of the items within each sub-dimension, their responses were included in our analysis. Where applicable, participants' personal mean for the survey scale in question was substituted for their missing data (Little & Rubin, 2014).

Analytic Design

To determine gains in participants' leadership capacities from the beginning of the year to the end, we conducted a series of matched-sample *t*-tests and a corresponding examination of Cohen's *d* effect size calculations (Cohen, 1987) for statistically significant differences. Cohen describes effect sizes ranging from .20 to .50 as "small," from .50 to .80 as "moderate," and greater than .80 as "large." Even though we set our *a priori* alpha level at .05 for effect size calculations, we also chose to identify results that evidenced a .10 alpha value. Given past scholarship regarding statistical analysis within exploratory studies that suggest using a .10 alpha level (Rosnow & Rosenthal, 1989), we recognize the additional value this may provide to future researchers, given that such an alpha implies a 90% chance of non-random differences, and describe such results as "marginally" significant. We used a matched-sample *t*-test design with follow-up tests for our variables of interest, as a *t*-test is the most direct way to measure programmatic interventions across research subjects and time and allows for any intervention effects to emerge without measurement bias across subjects. These measurements allowed us to examine yearlong gains through the use of fall and spring scores, to examine fall gains through differences in fall and winter scores, and

spring gains through differences in winter and spring scores. To analyze gains made across various social identity and involvement factors, we also conducted a series of matched-sample t-tests. To analyze the predictive power of gender identity in terms of gains in leadership capacity, we separated the overall sample into male and female groups. Finally, students were placed into three groups (low, moderate, and high) in terms of their degree of prior FFA involvement, based on their relevant responses on the fall pre-test. The "low" group included students who reported "little" or "no" prior involvement, the "medium" group reported "moderate" involvement, while the "high" group reported "lots" or "very deep" involvement. With a sample of 160 participants, the statistical power associated with the smaller cell sizes required for the involvement, class year, and gender analysis was inadequate to examine the gains made from fall to winter, and winter to spring. Therefore, statistical calculations that involved subgroupings included only calculations related to yearlong gains.

Results

We first calculated the overall means and dispersion statistics for each of the measures of leadership capacity designated by when they were collected (i.e., fall, winter, or spring). These results are displayed in Table 1. Students' transactional leadership skills emerged as more advanced than did their transformational skills to a small-to-moderate extent (Cohen's d ranged from .29 in the spring to .46 in the fall). In addition, the participants' social-normative motivation to lead scores emerged as moderately higher than the other two measure of leadership motivation (Cohen's d ranged from .40 to .71).

Table 1

Mean Scores of Students' Leadership Capacity by Research Phase

Measure	Fall *M (SD)*	Winter *M (SD)*	Spring *M (SD)*
Transformational Skill	3.57 (.40)	3.60 (.54)	3.68 (.50)
Transactional Skill	3.79. (54)	3.82 (.64)	3.84 (.64)
Affective-identity MTL	3.32 (.70)	3.33 (.79)	3.32 (.72)
Non-calculative MTL	3.62 (.57)	3.67 (.66)	3.57 (.50)
Social-normative MTL	3.75 (.50)	3.71 (.60)	3.71 (.56)
Leadership Self-efficacy	3.61 (.55)	3.61 (.66)	3.63 (.60)

Gains in Leadership Capacity Across and Within the Academic Year

To determine the degree to which students made significant gains in their comprehensive leadership capacity over the course of the academic year, we conducted a series of matched-sample *t*-tests for each respective measurement scale that compared students' pre-test scores from early fall with their matching post-test scores from late spring. The results of these analyses are displayed in Table 2. Across the academic year, students' transformational leadership capacity showed significant growth ($t(119) = 2.20$; $p = .04$) to a small-to-moderate extent ($d = .37$). By contrast, their social-normative motivation to engage in leadership behaviors showed a marginally significant small-to-moderate decrease ($d = .34$) over the course of the academic year ($t(119) = 1.84$; $p < .10$). No other statistically significant changes emerged from this analysis.

Table 2

Yearlong Gains in Students' Leadership Capacity

Measure	*t*	*p*	*d*
Transformational Skill	2.02	.04	.35
Transactional Skill	0.60	.55	
Affective-identity MTL	0.06	.96	
Non-calculative MTL	0.65	.52	
Social-normative MTL	-1.84	.06	.34
Leadership Self-efficacy	0.52	.60	

To determine the degree which students made gains in their leadership capacity specifically within the fall and spring terms, we conducted two series of matched-sample *t*-tests that connected students pre-test scores from the early fall with their winter term scores collected in early January as well as the winter scores with those collected in the late spring. The results of these analyses are shown in Table 3. Students' non-calculative motivation to lead scores significantly decreased to a moderate extent in the spring months ($d = .50$), signifying that during the spring term, fewer students were motivated to practice leadership in their FFA chapter without first knowing that their energy spent leading would result in personal benefits.

Table 3

Seasonal Gains in Students' Leadership Capacity

Measure	Fall-Winter			Winter-Spring		
	t	*p*	*d*	*t*	*p*	*d*
Transformational Skill	1.05	.29		1.45	.15	
Transactional Skill	0.15	.86		-0.21	.83	
Affective Identity MTL	0.25	.80		-1.63	.11	
Non-calculative MTL	0.65	.51		-2.80	.01	.50
Social Normative MTL	-1.40	.16		-0.80	.43	
Leadership Self-efficacy	0.63	.53		-0.24	.81	

Gains in Leadership Capacity by Prior FFA Involvement

In both the fall and winter data collection periods, students were asked to rate the degree to which they had been involved in the FFA prior to the current academic year. Based on their responses, they were placed into one of three groups: high, moderate, or low prior involvement. These groups were separated, and we conducted a matched-sample *t*-test for each. The results of these analyses are shown in Table 4. Students who were moderately involved prior to the current year made moderate and marginally significant gains in their transformational leadership skills. Students with a high degree of prior FFA involvement displayed a moderate decrease in non-calculative motivation to lead. Students who were new to the FFA during the current academic year displayed no significant changes to their leadership capacity scores during the course of the year.

Table 4

Yearlong Gains in Students' Leadership Capacity by Prior FFA Involvement

Measure	Low Involvement			Moderate Involvement			High Involvement		
	t	*p*	*d*	*t*	*p*	*d*	*t*	*p*	*d*
Transformational Skill	0.86	.40		1.76	.08	.45	0.72	.47	
Transactional Skill	-0.60	.59		1.47	.14		-0.26	.80	
Affective Identity MTL	1.14	.27		-0.69	.49		-0.16	.87	
Non-Calculative MTL	-0.37	.72		-0.21	.83		-1.88	.06	.64
Social Normative MTL	0.14	.89		-1.17	.25		-1.61	.11	
Leadership Self-efficacy	0.30	.77		0.62	.54		-0.10	.92	

Leadership Gains by Gender

        To measure the degree to which boys and girls involved in the FFA displayed different gains in their leadership capacity during the course of the academic year, we separated students by gender before conducting a corresponding matched-sample *t*-test for each group. The results of these analyses are presented in Table 5. Girls made moderate and significant (p <.05) gains in their transformational leadership skills during the course of the year as well as marginally significant moderate gains in their transactional leadership skills and leadership self-efficacy (p < .10). They also showed a significant and moderate decrease in their social-normative motivation to lead. Boys displayed no significant changes to their leadership capacity as measured by any of the scales.

Table 5

Yearlong Gains in Students' Leadership Capacity by Gender

Measure	Females			Males		
	t	*p*	*d*	*t*	*p*	*d*
Transformational Skill	2.49	.02	.64	0.80	.42	
Transactional Skill	1.78	.08	.46	-0.52	.60	
Affective Identity MTL	0.59	.58		-0.36	.72	
Non-calculative MTL	-0.41	.68		-1.62	.11	
Social Normative MTL	-1.78	.08	.46	-0.91	.37	
Leadership Self-efficacy	1.69	.09	.44	-0.43	.67	

Conclusions and Discussions

        Our first research objective was to identify measured gains in leadership capacity of FFA members exhibited during the course of an academic year. Even though transactional leadership skills emerged as more advanced than transformational skills (i.e. small-to-moderate Cohen's *d*) at the beginning of the academic year, students made marginal gains in the latter, while displaying no significant gains in the former. An initially higher transactional result may have been a function of both the development of the student and the structure of leadership opportunities available in the FFA.   From a student development perspective, according to Bass and Riggio (2008), transformational leadership requires that leaders be able to intellectually stimulate, offer support and encouragement, inspire motivation, and serve as a role model for followers. It is possible, from a developmental perspective, that students did not initially possess the leadership capacity to serve

in transformational leadership roles but, during participation in the FFA, developed such. Given that these FFA chapters are representative of many, our results provide exploratory evidence that involvement in the FFA over time is correlated with growth in transformational leadership skills. This finding supports past research that shows self-perceived gains made through the FFA (Brick, 1998; Carter & Spotanski, 1989; Mullins & Weeks, 2006; Rutherford et al., 2002).

The structure of the FFA may contribute to the initially high levels of transactional skills. The FFA organization is highly structured, and students are typically presented with leadership opportunities bounded in structure by the FFA and their advisor. Career Development Events, degree applications, proficiencies, and state and national convention participation provide students with opportunities for leadership growth, but these opportunities are most often within the constraints of a system. These constraints, typical in any youth organization or even in high school itself, may foster increased development of transactional leadership skills.

A surprising finding was the small decrease ($d = .34$) in social-normative motivation to lead that was evidenced by students during the academic year. Social-normative motivation to lead often stems from an individual's perception of a shared culture of responsibility to lead one's peers (Chan & Drasgow, 2001). During the academic year, students involved in the FFA reported slightly lower levels of this type of leadership-related motivation, potentially indicating that responsibility for leadership within the organization was perceived by fewer members. Additional study is necessary to determine the degree to which this is true and, if so, whether patterns emerge.

Our second objective was to examine seasonal leadership gains. The results revealed a significant and moderate decrease in non-calculative motivation to lead from winter to spring, potentially indicating that, during the academic year, students learn to make an effort to provide leadership only if it will benefit them personally. As they progress through their FFA activities, students may become more discriminating in regard to their involvement in leadership opportunities. They weigh the amount of energy it would take to lead against the amount of personal return to expect. This can be seen as both potentially positive and negative. If seen as a positive indication of student development and the FFA structure, our results might indicate that, as students learn to discriminate in participating in leadership opportunities, a byproduct might be increased opportunities for other chapter members to develop their own skills. If seen as a negative, our results might suggest that students learn to lead for more self-centered reasons, opting out of opportunities that they do not view as individually serving them. If such is the case, these findings could be a product of the chapter, the activities available, or the academic rigor of springtime. The hesitancy of students might relate to the fact that, by springtime, many voluntary or passion-generating leadership opportunities have already passed. For instance, chapter officers, committees, and teams are typically established months prior. Students may simply be reacting to prior involvement, potential over-commitment, or the lack of current attractive leadership opportunities. Further research should explore this decrease to determine whether key times may exist to enhance student's non-calculative motivation to lead.

Our third objective was to determine the degree to which prior FFA involvement might predict gains in leadership capacity during the academic year. Our results indicated that students who were moderately involved in the FFA the year before demonstrated a moderate increase ($d = .45$) in transformational leadership. Those with low involvement prior to the current year showed no significant gains in any area of their leadership capacity from the beginning of the academic year to its end. The scores of those with high involvement prior to the current year also showed no significant increases and even a decrease to a moderate extent ($d = .67$) in their reported non-calculative motivation to lead. These results suggest that not all students at all levels of involvement within the FFA make similar gains throughout the academic year. Students newer to the FFA might be focused on learning about the FFA and becoming effective team and organizational members rather than on their own individual leadership development, and more experienced members (likely those in officer positions, for example) might view themselves as

already highly skilled, as they demonstrate more discernment and discrimination in their selections for leadership roles.

Our final objective was to assess yearlong gains in leadership capacity with respect to gender. The results revealed significant areas of moderate growth in both transformational and transactional leadership skills, as well as leadership self-efficacy, and indicated a significant and moderate decrease in social-normative motivation within female members. In comparison, no significant leadership gains (or decreases) were seen in the males in this study. The lack of evidence for leadership capacity gains in males is concerning, particularly when corroborating past research efforts that uncover gender differences related to FFA involvement (Brick, 1998; Dormondy & Severs, 1994; Ricketts et al., 2004). A meta-analysis of 45 research studies on gender differences in professional organizations indicated that females typically score higher on transformational and transactional leadership than do males (Eagly & Carli, 2003). The authors attributed their findings to females' enhanced social skills, which leads to more collaborative leadership behavior and an increase in transactional leadership when the leading role is perceived to be congruent with their gender (Eagly & Carli). Still, in the large meta-analytic study, males typically scored higher on transactional forms of leadership, but such results were not found in the present study. Most of the research available on gender differences concerns participants at the collegiate level or higher. Given the rate of cognitive and psychological development of adolescents, future research should explore the gender differences in the leadership development of high school students.

Recommendations for Practice

The relative stability of several of the leadership construct scores throughout the year challenges us to consider options to enhance student growth within FFA organizations. Given the active role of the advisor in student development, we recommend examining ways to provide advisors with workshops or trainings to better equip them to teach leadership. The FFA chapters should be a fertile training ground where students grow and develop as leaders. Anecdotally, it seems that advisors currently receive the bulk of their training and mentoring through workshops that focus on discipline specific content, teaching methodologies, and FFA-related program components. The relative stability of several of the leadership construct scores suggests the need for more focus on creating environments to sustain the broad-based leadership development of students. It is likely that focused trainings on how to teach and develop student leadership capacity might result in greater student gains in this area.

The need for advisor training is further supported by the lack of leadership growth in students who indicated both low and high involvement the prior year. We would assume and hope that the higher the level of involvement, the greater the leadership development that occurs. The data indicate, however, that this is not the case. Perhaps focused pedagogical training related to teaching leadership would provide advisors with the additional skills to stimulate the leadership growth of students with low involvement and sustain the growth of students with high levels of involvement. It is feasible to believe that, given their current responsibilities, advisors spend the most individual and small-group advising and mentoring time with students new to executive roles in the organization. Determining the ways that leadership development can be infused into new, younger members and continued in older, more experienced members would create a much stronger leadership pipeline within the FFA. Moreover, it might provide a pathway to continued development in university settings, as recent research shows such pathways are not always assured (Rosch & Coers, 2013).

Given the differences in leadership gains made by students across gender and involvement profiles, advisors of FFA chapters might benefit from reinforcing an egalitarian process for managing opportunities for students' growth and development. One way to interpret these findings is that students, particularly girls, in their middle high school years hold the bulk of leadership opportunities in their FFA organizations and, when they become initially overwhelmed, learn to

discriminate between opportunities with more applied self-interest. This is one interpretation; however, further research is necessary to determine with more clarity the typical pathways to leadership development among students involved in the FFA.

Limitations and Recommendations for Future Research

Scant recent research exists that connects specific characteristics of leadership capacity growth with FFA involvement. As such, we crafted this exploratory investigation. We recognize the limitations associated with exploratory work, and, in this case, we recognize several limiting factors.

The lack of national representation and the number of chapters included in this study are limiting. FFA chapters across the nation are very diverse, and, although our current sample included three chapters from the same state, we did make every effort to include three diverse chapters in our study. However, care should be taken to evaluate these findings for practical considerations, which may not be generalizable to students from other states and FFA chapters. Further research should focus on a more representative sample or on differences that might emerge based on statewide FFA organizational or geographical diversity.

One of the limitations to this study was that, given the limited number of schools involved, we were not able to collect a large enough sample size to disaggregate chapter officers with any degree of statistical certainty. It is possible that the elected officers may have disproportionately high levels of transformational leadership when compared to the members at large. Typically, the duties of the chapter officers allow for more role modeling, motivation, inspiration, and cultivation of creative thinking than do those of the members at large. Future research should specifically evaluate the transactional and transformational leadership skills of the elected chapter officers to identify potential differences between officers and general chapter members.

A further limitation existed in our ability to track involvement. We had the students identify level of involvement for the prior academic year and clustered their responses into low, moderate, or high involvement. This method of analysis limited our ability to track current involvement and compare that with our leadership variables of interest. Future studies should explore different methods to collect real-time data on the actual level of involvement of the students for the duration of the study. It is possible that tracking current involvement may allow us to identify, with a measure of precision, specific activities or experiences that promote the development of leadership skills.

Despite the limitations and challenges associated with conducting leadership research with high school students, we have the opportunity to generate research that could rapidly improve the ability of advisors to enhance members' leadership skills. As an organization, FFA is committed to promoting premier leadership, and a substantial amount of anecdotal evidence exists that it does. If research can identify specific leadership constructs, the rate at which they are developed, and the mechanisms and activities that best promote leadership growth, we will be better prepare advisors and relevant stakeholders to develop premier leadership in the more than 500,000 student members of the National FFA Organization.

References

Astin, A. W. (1993). *What matters in college?: Four critical years revisited*. San Francisco: Jossey-Bass.

Bass, B. M. & Avolio, B. J. (1997). *Full range leadership development: Manual for the Multifactor Leadership Questionnaire*. Palo Alto, CA: Mind Garden.

Bass, B. M. & Riggio, R. E. (2008). *Transformational leadership*. Mahwah, NJ: Lawrence Erlbaum Associates.

Brick, T. A. (1998). *A national survey of FFA member's self-perceived leadership skills* (Unpublished doctoral dissertation). Texas A & M University, College Station.

Carter, R. I., & Spotanski, D. R. (1989). Perceptions of leadership and personal development of selected high school students in Iowa. *Journal of Agricultural Education, 30*(4), 30–34. doi:10.5032/jae.1989.04030

Chan, K.-Y., & Drasgow, F. (2001). Toward a theory of individual differences and leadership: Understanding the motivation to lead. *Journal of Applied Psychology, 86*(3), 481-498.

Cohen, J. (1987). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Dinh, J. E., Lord, R. G., Gardner, W. L., Meuser, J. D., Liden, R. C., & Hu, J. (2014). Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives. *The Leadership Quarterly, 25*(1), 36–62. doi:10.1016/j.leaqua.2013.11.005

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Dormody, T. J., & Seevers, B. S. (1994). Predicting youth leadership life skills development among FFA members in Arizona, Colorado, and New Mexico. *Journal of Agricultural Education, 35*(2), 65–71. doi:10.5032/jae.1994.02065

Dugan, J. P. and S. R. Komives (2010). "Influences on college students' capacities for socially responsible leadership." *Journal of College Student Development, 51*(5): 525-549.

Eagly, A. H, & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The Leadership Quarterly, 14*(6), 807–834. doi:10.1016/j.leaqua.2003.09.004

Faris, S. K., & Outcalt, C., L. (2001). The emergence of inclusive, process-oriented leadership. In C. L. Outcalt (Ed.), *Developing non-hierarchical leadership on campus: Case studies and best practices in higher education* (pp. 9-18).Westport, CT: Greenwood Press.

Hannah, S. T., Avolio, B. J., Luthans, F., & Harms, P. D. (2008). Leadership efficacy: Review and future directions. *The Leadership Quarterly, 19*(6), 669–692. doi:10.1016/j.leaqua.2008.09.007

Hoyt, C. L. (2005). The role of leadership efficacy and stereotype activation in women's identification with leadership. *Journal of Leadership and Organizational Studies, 11*(4), 2–14.

Keating, K., Rosch, D. M., & Burgoon, L. (2014). Developmental readiness for leadership: The differential effects of leadership courses on creating "ready, willing, and able" leaders. *Journal of Leadership Education, 13*(3), 1–16. doi:1012806/V13/I3/R1

Kezar, A. J., & Carducci, R., & Contreras-McGavin, M. (2006). Rethinking the "L" word in higher education: The revolution of research on leadership. *ASHE Higher Education Report, 31*(6).

Komives, S. R., Wagner, W., and Associates. (2009). *Leadership for a better world: Understanding the social change model of leadership development*. San Francisco, CA: Jossey-Bass.

Kouzes, J. M., & Posner, B. Z. (2007). *The leadership challenge* (4th ed.). San Francisco, CA: Jossey-Bass.

Little, R. J., & Rubin, D. B. (2014). *Statistical analysis with missing data*. New York, NY: John Wiley & Sons.

Mullins, J. G., & Weeks, W. G. (2006). Leadership behaviors exhibited by FFA chapter presidents. *Journal of Agricultural Education, 47*(1), 30–42. doi:10.5032/jae.2006.01030

Murphy, S. E. (1992). *The contribution of leadership experience and self-efficacy to group performance under evaluation apprehension* (Doctoral dissertation). University of Washington, Seattle. Retrieved from http://search.proquest.com/docview/304005264?accountid=14553 ProQuest Dissertations & Theses (PQDT) database.

Murphy, S. E., & Ensher, E. A. (1999). The effects of leader and subordinate characteristics in the development of leader-member exchange quality. *Journal of Applied Social Psychology*, *29*(7), 1371–1394.

National FFA Organization. (2014). *Official FFA manual.* Indianapolis, IN: Author.

Owen, J. (2012). *Examining the design and delivery of collegiate student leadership development programs: Findings from the Multi-Institutional Study of Leadership (MSL-IS), a national report.* Washington, DC: Council for the Advancement of Standards in Higher Education.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly, 1*(2), 107–142. doi:10.1016/1048-9843(90)90009-7

Ricketts, J. C., Osborne, E. W., & Rudd, R. D. (2004). Female leadership in rural Florida FFA chapters. *Journal of Agricultural Education, 45*(1), 42–53. doi:10.5032/jae.2004.01042

Ricketts, S. C., & Newcomb, L. H. (1984). Leadership and personal development abilities possessed by high school seniors who are members in superior and non-superior FFA chapters, and by seniors who were never enrolled in vocational agriculture. *Journal of the American Association of Teacher Educators in Agriculture, 25*(2), 51–59. doi:10.5032/jaatea.1984.02051

Rosch, D. M. (2014). Predicting student leadership in agricultural professional preparation organizations. *NACTA Journal, 58*(1), 7–10.

Rosch, D. M., & Coers, N. (2013). A national profile of leadership capacities and involvement in college: Agricultural students compared to peers. *Journal of Agricultural Education, 54*(1), 83–96. doi:10.5032/jae.2013.01083

Rosnow, R. L., & Rosenthal, R. (1989). Statistical procedures and the justification of knowledge in psychological science. *American Psychologist*,*44*(10), 1276-1285.

Rost, J. C. (1993). *Leadership for the 21st century*. Westport, CT: Praeger.

Rutherford, T. A., Townsend, C. D., Briers, G. E., Cummins, R., & Conrad, C. R. (2002). Leadership self-perceptions of WLC participants. *Journal of Agricultural Education, 43*(2), 22–33. doi:10.5032/jae.2002.02022

Stewart, B. R., Smith, C. L., Ehlert, M. W., & Mihalevich, J. R. (1985). Member, officer, and advisor perceptions of FFA organizational goals and activities. *Journal of the American Association of Teacher Educators in Agriculture, 26*(2), 47–55. doi:10.5032/jaatea.1985.02047

Wingenbach, G. J., & Kahler, A. A. (1997). Self-perceived youth leadership and life skills of Iowa FFA members. *Journal of Agricultural Education, 38*(3), 18–27. doi:10.5032/jae.1997.03018

Yukl, G. (2010). *Leadership in organizations* (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.