

ABSTRACT

RADFORD, DANIEL AARON. The Effectiveness of the North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program in Developing Leadership Skills. (Under the direction of Dr. Joy Morgan Fleming).

America's farmers and ranchers are faced with an increasing number of challenges that impact the agriculture industry on a daily basis and these individuals need to be equipped with the tools to lead, communicate, and survive in an ever-changing field. Nationwide, there are at least 40 states that have agricultural leadership development programs designed to develop leaders at the local, state, national, and international levels. The purpose of this study was to determine the outcomes of the NCTTFC ALDP in developing leadership skills on the personal, business/professional, and societal/community levels. A retrospective pre-test post-test survey design was used for the research study based on the work of Black (2006) and the EvaluLEAD framework proposed by Grove et al. (2005). A census consisting of 30 program alumni from the 2017-2019 NCTTFC ALDP cohort was utilized for this study and the findings are based on an alumni response rate of 90% ($n = 27$). Findings indicate that alumni significantly improved their leadership development on the personal ($M = 0.9$), business/professional ($M = 1.06$), and societal/community levels ($M = 1.19$). The findings of this study document program outcomes and necessary improvements useful for the continued planning and facilitation of the NCTTFC ALDP for future program cohorts and provides implications for the planning, implementation, and evaluation of similar statewide agricultural leadership development programs. It is recommended that an additional qualitative study be conducted to gain a more comprehensive view of the NCTTFC ALDP to better understand how alumni have applied what they learned throughout the program to their personal lives, in their businesses and organizations, and within their communities.

© Copyright 2020 by Daniel A. Radford

All Rights Reserved

The Effectiveness of the North Carolina Tobacco Trust Fund Commission Agricultural
Leadership Development Program in Developing Leadership Skills

by
Daniel Aaron Radford

A thesis submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Master of Science

Agricultural and Extension Education

Raleigh, North Carolina
2020

APPROVED BY:

Dr. Koralalage Jayaratne

Dr. Travis Park

Dr. Joy Morgan Fleming
Committee Chair

DEDICATION

I dedicate this thesis to Dr. W. K. (Bill) Collins with whom I have had the pleasure of working with while completing my graduate studies and research on the NCTTFC ALDP. Thank you for the countless amount of hours you have spent developing and implementing programs to benefit farmers and agriculturalists throughout North Carolina.

I also dedicate this thesis to my late grandparents, Marjorie and William Aaron Radford. Thank you for instilling in me the importance of hard work and dedication and always encouraging me to do my best. I miss you both dearly.

BIOGRAPHY

Daniel Radford grew up in the small community of Nahunta in Wayne County, North Carolina. After graduating from Charles B. Aycock High School in 2013, Daniel attended Wayne Community College in Goldsboro, North Carolina and earned an Associate of Applied Science in Applied Animal Science Technology. Daniel then transferred to North Carolina State University in Raleigh, North Carolina where he graduated with a Bachelor of Science in Agricultural Science with minors in Agricultural Business Management and Animal Science. He was involved with the Agricultural and Extension Education Club and the North Carolina Farm Bureau Young Farmers and Ranchers Chapter at North Carolina State University where he held several officer positions. During the summers of his undergraduate degree, Daniel served as an intern with the North Carolina Farm Bureau Federation and with the North Carolina Cooperative Extension State 4-H Youth Livestock Program. After graduating with his bachelor's degree, Daniel returned to North Carolina State University to pursue his Master of Science in Agricultural and Extension Education. Upon graduating, Daniel plans to enter the agricultural sector pursuing a career in the field of education, extension, or industry.

ACKNOWLEDGMENTS

This thesis and degree would not have been possible without the support and guidance of so many individuals. Mom and Dad, thank you for supporting me throughout this journey and providing me the opportunity to continue my education. Your support, encouragement, meals, and prayers have gotten me to where I am today. Mom, I will always remember our daily phone calls when you were on the way home from work. Thank you for always listening, providing advice, and encouraging me each step of the way. Again, thank you both for all you have done and continue to do for me.

Matthew, Brittini, Grandma, Grandpa, and Aunt Jackie, thank you for always checking on me and encouraging me throughout my studies. Your phone calls and text messages always came at the right time. You all have played a significant role in helping me accomplish this goal and without each of you this would not have been possible.

Bradley, thank you for being my best friend. I cannot thank you enough for your support and encouragement throughout this process. Thank you for always finding a way to make me laugh at the right time. Even though you are thousands of miles away, I know that I can always count on you no matter the situation.

Susan, I am so thankful for how our friendship has grown over the past two years. Thank you for always answering all of my questions and helping me in any way that you could no matter how much I got on your nerves. I owe you big time because, without you, I would not have made it through this graduate program.

Olivia, thank you for keeping things interesting in the office and always finding a way to make us laugh. The late nights and weekends working on school work and our theses will always

be remembered, however, I am glad that we do not have to spend those long hours in Ricks 208 anymore.

Emma, you were so helpful during my first year of graduate school. I am so glad that we were able to share an office – you always found a way to brighten my day. You have accomplished so much over the past several years and I look forward to all that you will accomplish in the future. I appreciate your friendship, your help, and your guidance while completing my degree.

Daniel Collins, thank you for all of the life advice and helping us younger graduate students navigate through the graduate school journey. I have enjoyed getting to work with you over the past several years and I look forward to seeing all of the great things you will accomplish as Dr. Collins!

Dr. W. K. (Bill) Collins, I cannot thank you enough for all that you have done for me throughout my graduate studies. It has been an honor to get to know you and work with you over the past two years. Thank you so much for providing me the opportunity to work with you over the summer while I was pursuing my master's degree. Through your leadership and example, innovative thinking, and unwavering commitment to students and people in agriculture, you have proven yourself an extraordinary role model whom I look up to, admire, and respect. You have left a lasting legacy throughout North Carolina and beyond, and I am so thankful that I have had the opportunity to get to know you better over these last two years. Thank you for your commitment to bettering the lives of others and demonstrating the characteristics of a true leader. "The check's in the mail!"

Dr. Jay, I cannot thank you enough for all of your help and guidance throughout my graduate studies. Thank you for answering all of my questions about my data and statistics and

for always taking the time out of your day to meet with me or to ask how my research was going. I sincerely appreciate you always stopping what you were doing and never making me feel like a burden. Your willingness to help me and to make sure that my project was a success means more to me than you will ever know. Again, I cannot thank you enough for all of your help throughout my graduate studies and while I was completing my thesis.

Dr. Morgan, thank you for providing me the opportunity to pursue my master's degree and to work with the NCTTFC ALDP. Thank you for believing in me and pushing me out of my comfort zone. It has been a pleasure to get to know you personally and professionally and I look forward to working with you in the future. Dr. Park, thank you for enduring all of my questions whether it was for my classes or my thesis. Your help and guidance over the past two years are greatly appreciated.

Dr. Warner, thank you for always being so helpful, checking in on us graduate students, and finding a way to make us laugh. I always look forward to your stories! Dr. Kirby, thank you for your encouragement and advice over the past two years and all your help with my historical research. Your help and guidance were crucial in preparing me for conferences and presentations. Thank you for always being willing to answer my questions and allowing me to take a break from writing to sit on your couch.

Mrs. Gloria, I cannot thank you enough for all you have done for me and continue to do for everyone in Ricks Hall. Your welcoming smile every morning means more to me than you will ever know. Thank you for always checking in on me, taking care of all of us in the office, and caring for all of the plants. I am so thankful that I have gotten to know you throughout my undergraduate and graduate studies.

To all of my family and friends who are not named specifically, I would not have been able to accomplish this goal without your support. I want to sincerely thank you for your understanding and encouragement throughout this journey and for playing a significant role in allowing me to accomplish my goals and getting me to where I am today.

Finally, I would like to express my deepest appreciation to the North Carolina Tobacco Trust Fund Commission for allocating grant funding to support this project. Thank you for providing me the opportunity to further my education by working with some of North Carolina's distinguished farmers and agriculturalists. I hope this research serves as a valuable tool and resource for advancing the North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program to further impact and improve our state's number one industry.

TABLE OF CONTENTS

LIST OF TABLES	xi
LIST OF FIGURES	xii
CHAPTER 1: INTRODUCTION	1
Background of Agriculture in the United States.....	1
The Agricultural Industry in North Carolina	3
Agricultural Leadership Development Programs Throughout the United States	5
NCTTFC Agricultural Leadership Development Program.....	6
Statement of the Problem.....	9
Purpose of the Study	11
Research Questions	11
Significance of the Study	12
Definition of Terms.....	13
Assumptions.....	16
Limitations	16
Chapter Summary	16
CHAPTER 2: REVIEW OF LITERATURE	18
Theoretical Framework.....	18
Bandura’s Social Learning Theory	18
Knowles’ Andragogical Model.....	22
Self-concept	23
Experience.....	23
Readiness to Learn.....	24
Orientation to Learning.....	24
Motivation to Learn	25
Birkenholz’s Adult Learning Principles	26
Black’s Theoretical Model Relating to Statewide Leadership Programs	29
Literature Review.....	30
Importance of Agricultural Leadership Development	30
Objectives and Topics Covered in Leadership Development Programs	34
Components of Leadership Development Programs	37
Impacts and Outcomes of Agricultural Leadership Programs, Rural Development Programs, and Community Leadership Programs	41
Leadership Development Program Evaluation	43
EvaluLEAD Framework.....	46
Chapter Summary	52
CHAPTER 3: METHODOLOGY	53
Purpose.....	53
Research Design.....	54
Research Variables.....	55
Study Population.....	55
Instrumentation	56

Part One: Personal Level	57
Part Two: Business/Professional Level	57
Part Three: Societal/Community Level	58
Pilot Test	59
Reliability.....	60
Data Collection	60
Data Analysis	62
Research Question 1	62
Research Question 2	63
Research Question 3	63
Research Question 4	64
Chapter Summary	65
CHAPTER 4: RESULTS	66
Findings.....	67
Findings Related to Research Question 1: Growth in Leadership Skills.....	67
Personal Level.....	67
Business/Professional Level	70
Societal/Community Level	72
Change in Overall Leadership Development.....	74
Findings Related to Research Question 2: Personal Level Impacts	75
Findings Related to Research Question 3: Business/Professional Level Impacts	80
Findings Related to Research Question 4: Societal/Community Engagement.....	83
Organizational Involvement.....	85
Chapter Summary	90
CHAPTER 5: SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS.....	91
Summary of Study	91
Purpose of the Study and Research Questions.....	91
Significance of the Study	92
Study Design and Instrumentation.....	93
Data Collection and Analysis.....	93
Discussion and Conclusions	94
Research Question 1	94
Research Question 2	98
Research Question 3	99
Research Question 4	101
Implications.....	104
Recommendations.....	105
Recommendations for Practice	106
Recommendations for Future Research.....	109
REFERENCES.....	112

APPENDICES	126
APPENDIX A: Institutional Review Board Approval	127
APPENDIX B: Survey Invitation	128
APPENDIX C: Survey Instrument	130

LIST OF TABLES

Table 1	Personal Level of Competence Before and After Participation in the NCTTFC ALDP.....	69
Table 2	Business/Professional Level of Proficiency Before and After Participation in the NCTTFC ALDP	71
Table 3	Societal/Community Level of Competence Before and After Participation in the NCTTFC ALDP	73
Table 4	Paired Sample <i>t</i> -tests Comparing Overall Leadership Development Growth for the Personal, Business/Professional, and Societal/Community Levels	75
Table 5	Agreement With Statements Regarding Personal Improvement After Completing the NCTTFC ALDP	77
Table 6	Agreement With Statements Regarding Business/Professional Improvement After Completing the NCTTFC ALDP	81
Table 7	Participants' Organizational Involvement Before and After the NCTTFC ALDP.....	86
Table 8	Organizational Involvement at the Member Level Before and After the NCTTFC ALDP	88
Table 9	Organizational Involvement at the Committee Member/Officer Level Before and After the NCTTFC ALDP	89

LIST OF FIGURES

Figure 1 Social Learning Theory 21

Figure 2 Theoretical Model of Leadership Relating to Statewide Leadership
Programs..... 30

Figure 3 EvaluLEAD Conceptual Model 49

CHAPTER 1

INTRODUCTION

Background of Agriculture in the United States

In the United States, the agricultural industry extends across many different sectors and industries, impacting multiple areas of our nation's economy. Agriculture, food, and related industries contributed \$992 billion dollars to the U.S. gross domestic product (GDP) in 2015, resulting in a 5.5% share (United States Department of Agriculture Economic Research Service [USDA ERS], 2018a). With the value of U.S. agricultural exports reaching \$140 billion in 2018 (USDA ERS, 2019), the demand for U.S. agricultural products is likely to increase with the growing world population and urbanization. Each year, approximately two million acres of land including farms, ranches, forests, wildlife habitat, and other open spaces are lost to fragmentation and development. Losing this land and acreage places a significant impact on America's farms, recreational areas, wildlife, and other available resources (United States Council of Economic Advisers [USCEA], 2013). Not only will farmers have to develop more innovative ways to produce food and other agricultural products using less land and other resources, but many researchers suggest the effects of climate change on livestock and cropping systems will also have effects on the agricultural industry as a whole (USCEA, 2013).

The number and types of agricultural operations vary throughout the nation. In 2017, there were 2.17 million male agricultural producers and 1.23 million female producers, contributing to a total of 3.4 million farmers and ranchers in the United States (United States Department of Agriculture National Agricultural Statistics Service [USDA NASS], 2019). According to the USDA ERS (2018b), 98% of farms were classified as family farms and accounted for 87% of production in 2017. The remaining 2% of farms were nonfamily farms and

accounted for 13% of production (USDA ERS, 2018b). Occurring in all 50 states and ranging from crops, livestock, fruits, tree nuts, dairy, and poultry, agricultural land use utilizes 655 million acres for grassland pasture and rangeland, 632 million acres for forest land, and 392 million acres for cropland of the 2.3 billion acres of the total land available in the United States (Bigelow & Borchers, 2017).

As portrayed in the media, the farming population is graying with the average age of all U.S. farm producers reported at 57.5 years old (USDA NASS, 2019). Compared to the late 1960s when only 16.4% of principal farm operators were 65 years of age or older, by 2007, 30% of all farms were operated by individuals over the age of 65 (USCEA, 2013). In 2019, American farmers and agriculturalists accounted for 1% of the population, with almost 28% of these individuals between the ages of 55 to 64 (Center for Sustainable Systems, 2019). Unfortunately, as these farmers age, much of the fragmentation and development occur as they decide what will happen to their land.

In order to face the many challenges that continue to impact the agricultural industry on a daily basis, farmers, ranchers, and other agriculturalists will need to be equipped with the resources and knowledge of how to keep their operations profitable for future generations and provide leadership to address those current and future agricultural challenges. As the world population continues to rise, growing enough food for an increasing population while utilizing conservation management practices, implementing new technology and production practices, and diversifying their operations in order to stay abreast, farmers and agriculturalists must be innovative leaders to face the growing challenges and demands of society.

The Agricultural Industry in North Carolina

Agriculture in North Carolina is an \$87 billion dollar industry and continues to remain North Carolina's biggest economic driver, supporting more than 688,000 jobs and representing 16% of North Carolina's workforce (North Carolina Department of Agriculture and Consumer Services [NCDA&CS], 2018). In 2018, 8,400,000 acres made up approximately 48,000 farms that were used for agriculture, producing more than 80 different crops and commodities. The main crops grown in North Carolina include tobacco, soybeans, corn, hay, cotton, sweet potatoes, wheat, peanuts, blueberries, tomatoes, cucumbers, melons, strawberries, squash, peppers, cabbage, beans, pumpkins, oats, sorghum, and barley (USDA NASS, n.d.). Specifically, North Carolina farmers and agriculturalists are known and recognized for the state's ranking in tobacco, sweet potatoes, poultry and eggs, swine, Christmas trees, trout, turkey, processed cucumbers, and fresh strawberries (Adams, 2019; NCDA&CS, 2018). As a whole North Carolina continues to play a large role in the agricultural industry throughout the United States, ranking eighth out of all 50 states in farm cash receipts (NCDA&CS, 2018).

In addition, North Carolina is the third most diverse agricultural state in the country (NCDA&CS, 2010) largely due to its geography and being the longest state with the greatest altitude range east of the Mississippi River. The great amount of agricultural diversity throughout the state allows various commodity associations to advance and continue to lead the agricultural industry in North Carolina. Land grant institutions such as North Carolina State University (NC State) work closely with a large number of commodity groups and industry partners. By developing partnerships with farmers, scientists, government organizations, and commodity groups, land grant universities throughout the United States and in North Carolina extend

knowledge and seek to improve the lives of individuals through academics, research, and extension opportunities (NC State, n.d.).

In 1862, the first Morrill Act was created which established the land grant college system in the United States. This act provided federal lands for the establishment of an agricultural and mechanical college in every state to educate people on the proper care and management of agricultural resources and ecological environments (Abramson et al., 2014). Several additional acts followed that expanded agricultural programs. The Second Morrill Act of 1890 provided funding to establish a land grant if prior land grant universities had excluded individuals on the basis of race and ethnicity. Later, the Smith-Lever Act of 1914 established the Cooperative Extension System that was the foundation of the extension system we know today. Lastly, in 1994, 29 Tribal Colleges were given land grant status contributing to the total of 106 land grant universities throughout the United States (Abramson et al., 2014). Land grant universities and their programs play a vital role in advancing agriculture through their three main pillars: teaching, research, and extension.

Here in North Carolina, we are fortunate to have two land grant institutions that play a large role in helping to disseminate research out to the public, creating extension programs, and educating others about agriculture. NC State was established in 1887 as a land grant institution, followed by North Carolina Agricultural and Technical State University (NC A&T) in 1891. The Cooperative Extension Service is also housed at these universities and can be found in all 100 North Carolina counties, including the Eastern Band of the Cherokee Indians. Over the years, programs housed at land grant institutions have greatly impacted individuals' lives and communities throughout the United States (Atiles et al., 2014).

Land grant university programs and research often focus on major issues affecting farmers, ranchers, families, youth, and communities. These programs are designed and implemented by university faculty with community partnerships and grant projects. They serve an important role in assisting farmers and other agricultural professionals with recognizing and implementing strategies and techniques that will continue to move the agriculture industry forward in North Carolina for the future. One such program focused on advancing the leadership skills of agriculturalists that is implemented at NC State is the North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program (NCTTFC ALDP).

Agricultural Leadership Development Programs Throughout the United States

To create and develop leaders within the agricultural industry, many states have implemented agricultural leadership development programs. These programs are designed to help meet the growing demands of the industry and promote community leadership to impact change. These leadership programs assist in developing participants' leadership potential with the hopes that they will return to their home communities, businesses, and organizations and serve in leadership roles. In addition, these programs often include sessions on business skill development, networking opportunities, and effective communication strategies (Diem & Nikola, 2005).

Agricultural leadership programs have existed for many years due to a need for teaching individuals how to deal with change in rural communities, while also providing them with the education and skills needed to assume leadership positions (Kelsey & Wall, 2003). The beginnings of rural leadership development programs can be traced back to 1965 when Michigan State University in conjunction with the W. K. Kellogg Foundation created a new program, referred to as the Kellogg Farmer Study Program. Many agricultural leadership programs in

existence today are based on this framework that was established in 1965 (Carter & Rudd, 2000; Helstowski, 2000; Kaufman & Carter, 2005; Miller, 1976; Rossing & Heasley, 1987). The founders of the Kellogg Farmer Study Program recognized the need for effective rural leaders and believed that developing skills in the social sciences were crucial for dealing with the increasingly complex problems of the agricultural industry (Kaufman & Carter, 2005; Miller, 1976). After the creation of the first rural leadership development program at Michigan State University, additional programs were started in California and Pennsylvania in 1970, and in 1971, Montana developed their version of the program (Howell et al., 1982).

Within the United States, there are at least 40 states that have agricultural leadership programs focused on developing community leaders (Kaufman & Carter, 2005), and providing training for individuals to assume leadership roles in other organizations at the local, state, and national level (Horner, 1984). Throughout the programs, participants take part in leadership education modules, institutes, seminars, and study tours that incorporate individual leadership skill development, community and developmental processes, public policy, working with groups and teams (Apaliyah & Martin, 2013), and often engage participants in current issues happening on a state and national level that are not commodity or sector-specific (McKee et al., 2016).

NCTTFC Agricultural Leadership Development Program

The agricultural industry is constantly undergoing social, economic, and political changes that impact agriculture and rural communities. These challenges impact farmers and other rural leaders, making it important for potential leaders in agriculture to be identified and trained to take on new roles that positively impact their families, businesses, and communities (NCTTFC ALDP, 2017). Leaders within the agricultural industry “must be prepared to bridge the gaps between rural and urban interests, to participate actively in issues affecting agriculture and to

foster unity among agricultural interests” (NCTTFC ALDP, 2017, p. 1). The NCTTFC ALDP, housed within NC State’s College of Agriculture and Life Sciences (CALs) aims to prepare early to mid-career agricultural professionals to meet the growing and complex challenges of all sectors of the agricultural industry.

The NCTTFC ALDP was formally known as the Philip Morris Agricultural Leadership Development Program. From its inception in 1984, the program was sponsored by Philip Morris and solely targeted flue-cured tobacco farmers in North Carolina, Virginia, South Carolina, Georgia, and Florida (Brown, 2016b). In addition, Philip Morris also sponsored a program at the University of Kentucky that focused on the developmental needs of burley tobacco farmers. The Philip Morris Agricultural Leadership Development Program remained in existence until the federal tobacco program ended in 2004 (Brown, 2016b). Due to the perceived need of agricultural leadership development throughout North Carolina, Dr. W. K. (Bill) Collins, who was the program director, restructured the program to support all individuals involved in the agriculture industry in North Carolina. Since the program’s restructuring, funding for the program has been supplied mainly through a five-million dollar endowment from the North Carolina Tobacco Trust Fund Commission, in addition to other sponsors and donors. Participants also pay a fee to participate in the leadership program but depending on their financial need may apply for a scholarship to offset some of the costs (Brown, 2016a, 2016b).

Within this specific program, each cohort engages in approximately 50 days of training and leadership development over the span of two years. This training typically includes eight seminars throughout North Carolina, a legislative study tour to Washington, D.C., an international study tour to Brazil, a domestic study tour to Texas, and local study tours covering the diverse agricultural landscape throughout North Carolina (NCTTFC ALDP, 2017). The

international study tour provides participants with opportunities to observe production and marketing strategies employed by farmers and other agricultural professionals who are a large United States agricultural competitor. The tours occurring in Texas and North Carolina allow participants to observe the production of a wide variety of agricultural commodities and businesses while seeing how all of agriculture is connected. Furthermore, these tours allow program participants to see various methods of agricultural production and give them a first-hand look at how producers throughout the United States and Brazil deal with agricultural challenges and issues that are both similar and different to those in North Carolina (NCTTFC ALDP, 2017).

Structured much like the other agricultural leadership development programs throughout the United States focusing on developing personal and civic leadership skills in farmers and other agricultural professionals, North Carolina participants spend two years meeting and interacting with leaders from government and related agencies, commodity groups, farm organizations, and other agricultural-related businesses and professionals discussing issues and additional leadership development opportunities (NCTTFC ALDP, 2017). Further training and instruction within the program include the following topics:

- Mastering Self
- Mastering an Understanding of Agriculture's Environment
- Mastering Relationships
- Managing Social and Organizational Action
- Enhancing Participant's Understanding of Global and National Aspects of Agriculture (NCTTFC ALDP, 2017, p. 1)

To date, since the inception of the original agricultural leadership development program in 1984, the program has had over 250 alumni. Many of these individuals hold leadership

positions in agriculture, agriculturally related industries, and other sectors throughout North Carolina and beyond (Brown, 2016b).

Since the beginning of this program, no large evaluation has been completed to determine the impacts it has had on participants in terms of the capacity of the program in building participants' leadership skills. To fill this knowledge gap and assist stakeholders, curriculum developers, and future program participants, an assessment of program alumni should be completed. Evaluations of leadership development programs help to justify costs and resources associated with their operation. Also, these assessments provide an opportunity to identify needed changes and address problems to benefit the future success of the program (Sowik et al., 2018). An evaluation will help to determine if the program is producing leaders equipped to take on leadership roles, impact policies, and benefiting the agricultural community as a whole. The focus of this study is to evaluate the development of leadership skills in participants who were in the 2017-2019 cohort of the NCTTFC ALDP.

Statement of the Problem

In 1900, approximately 41% of the American workforce was employed in agriculture (Dimitri et al., 2005). Now, farm and ranch families comprise less than 2% of the United States population, with each farm feeding approximately 166 people annually in the United States. With the increasing global population expected to increase to 2.2 billion by 2050, farmers and other agriculturalists will be tasked with growing about 70% more food (American Farm Bureau Federation, 2019).

To assist in meeting these growing needs and challenges, leadership training and development programs focused on agriculture are essential. As Kaufman et al. (2010) suggest, grassroots leadership training curriculum should be designed to fit the growing needs and

challenges of individuals involved in agricultural organizations and communities. Making sure that curriculum and programming meet the needs of participants is an important factor when developing and implementing agricultural leadership development programs. In addition, the time of faculty and staff and financial commitments on behalf of NC State CALS, donors, and each participant serve the importance of making sure that the NCTTFC ALDP is reaching its full potential. Developing and implementing a high caliber agricultural leadership development program not only impacts the participants but also helps to advance the lives of individuals in North Carolina and on a national level.

Since the creation of the agricultural leadership development program in North Carolina, the scope and objectives of the program have changed. As mentioned previously, the program started out in 1984, as a leadership development program for flue-cured tobacco farmers. When changes drastically impacted the tobacco industry and North Carolina agriculture, the scope of the program shifted to include all farmers and agriculturalists. Program participants have self-reported that their experiences while completing the program were beneficial for both their personal and professional life and have often reported that the program was effective. However, no prior research or evaluation has been conducted on the NCTTFC ALDP to determine the growth in leadership skills of participants and where these skills were used on the personal, business/professional, and societal/community levels. Meehan and Reinelt (2007) state that leadership development programs recognized as developing leaders at the individual, organizational, and community levels are more likely to be sustainable for future programs. In order to sustain the NCTTFC ALDP, the outcomes produced by the program on alumni and their communities need to be examined to ensure the program is reaching its intended goals and

needed improvements can be made. Therefore, it is important that those who support, sponsor, and assist with the program understand its impacts on participants and North Carolina residents.

Purpose of the Study

The purpose of the NCTTFC ALDP is to empower the next generation of agriculturalists with the knowledge, experience, and skills to become successful leaders in their personal lives, businesses, local communities, the state, and the nation (Brown, 2016a). The purpose of this study was to determine the perceived effects of the agricultural leadership development program on the personal, business/professional, and societal/community levels of participants in the 2017-2019 cohort. Determining these outcomes will allow stakeholders of the program to identify needed improvements, celebrate successes, make the necessary changes, and critically examine the outcomes (Black & Earnest, 2009) to ensure that the NCTTFC ALDP is benefiting participants' overall development and the agricultural industry as a whole.

Research Questions

The following research questions guided this study:

1. What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?
2. Where did the program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?
3. Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program?

4. Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program?

Significance of the Study

While there are a substantial number of agricultural leadership development programs throughout the United States, a review of the literature reveals that there is not much research available on adult agricultural leadership development programs and their outcomes on the personal, business/professional, and societal/community levels. There are many organizations engaging in adult agricultural leadership development, but it appears that individual organizations are unable to benefit from the lessons learned due to a lack of detailed research being published on these programs (Hejny, 2010; Kaufman & Rudd, 2006).

This research study attempted to identify the perceptions of leadership skills of program alumni from the 2017-2019 cohort of the NCTTFC ALDP. There were many benefits to this quantitative study. To start, this research study has been the only source of information gathered in evaluating the benefits, if any, of the participants that are completing and graduating from the program. This study will also enhance the NCTTFC ALDP by providing data on how program participants are improving their leadership skills on a personal, business/professional, and societal/community level. This research study will also provide quantifiable data to donors and contributors of the program allowing them to see the program's impacts and areas where additional improvements are needed. Additionally, the institutional and personal commitment of NC State and program leaders will be justified. Other benefits of this research study include providing the program steering committee, stakeholders, and directors of the NCTTFC ALDP an understanding where the program is meeting the needs of participants, as well as areas of where

the program can be improved. Ultimately, this research study has the potential to assist program leaders in developing training and modules that will contribute to the development of future leaders who are ready to make a positive impact throughout their personal lives, in their businesses, and within their communities.

Definition of Terms

Commodity associations: Commodity associations are organizations that bring together a wide spectrum of interest groups related to a particular commodity or sector (such as horticulture) in a particular country, whether the commodity is for export, for the domestic market or for both. Such associations can draw membership from individual farmers or their associations, from crop buyers, processors, distributors, and exporters, as well as from suppliers of support services. (Shepherd et al., 2009, p. v)

Evidential inquiry: This method of inquiry attempts to capture and represent facts regarding what is happening to people, their organizations and communities through leadership development programs. It seeks to capture descriptive, numeric, and physical evidence of a program's impact and supports analytic and deductive assessment of a program's influence and worth through both qualitative and quantitative methods (Grove et al., 2007).

Evocative inquiry: This type of inquiry seeks the perspectives and sentiments of those influenced by a specific program. This can be either the program participants or subsequent beneficiaries of participants' actions. "This feedback is obtained and conveyed as stories, viewpoints, or discourse through methods such as open-ended surveys, case studies, anecdotes, journals, and video diaries, and plays to the intuitive sensitivities of those interested in the program" (Grove et al., 2007, p. 82). It attempts to capture and reproduce some of the richness

and human aspect of what is happening or has happened throughout a leadership development program (Grove et al., 2007).

Executive Farm Management (EFM) Program: A program offered through NC State CALS, NC State Cooperative Extension, NC State Poole College of Management, Clemson Cooperative Extension, ECU College of Business, and University of Georgia Cooperative Extension. Program curriculum focuses on the management aspects of family-owned agricultural operations and is adaptable for operations of any size, scale, and commodity focus throughout the Southeastern United States. The program consists of 12 days of curriculum and content taught across three sessions and three states over the duration of six weeks (Huffman, 2019).

Individual outcomes: The domain where most of the direct benefits of a leadership development program occur and where most program associated results might be expected from program graduates (Grove et al., 2005).

North Carolina Tobacco Trust Fund Commission (NCTTFC): Created by the North Carolina General Assembly in 2000 to lessen the financial impact on farmers and tobacco-related businesses caused by the drastic decline of tobacco in the agricultural economy. The NCTTFC awards grants for agricultural and economic initiatives across North Carolina. The grants place a high priority on projects that address ways to train people for new careers, stimulate the agricultural economy, assist farmers with innovative ideas and facility enhancements, and research and educational opportunities. The grants and projects funded assist with innovative on-farm projects, increase leadership skills and offer operational strategies designed to help farmers increase farm income (North Carolina Tobacco Trust Fund Commission, n.d.).

North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program (NCTTFC ALDP): An agricultural leadership development program housed in the

College of Agriculture and Life Sciences at NC State to develop personal and civic leadership skills in farmers and agricultural professionals throughout North Carolina.

Nuffield International Scholars Program: The Nuffield International Scholars Program is a competitive program designed to inspire individuals to make a difference within agriculture and both local and global communities. This program allows participants to spend six weeks exploring agriculture in up to seven different countries, providing individuals the opportunity to engage with agricultural leaders, broaden horizons, and to experience a variety of other cultures (Nuffield International Farming Scholars, n.d.).

Organizational outcomes: Refer to the organizations where the program alumni work or in other outside organizations where the participants are involved and can apply their leadership skills and perspectives. Results associated with the organizational domain can occur in any organization in which the participant is involved (Grove et al., 2007).

Population Leadership Program (PLP): A program of the Public Health Institute (PHI) that is funded by the United States Agency for International Development (USAID) to support leadership development for the Bureau for Global Health. The EvaluLEAD initiative was created in response to PLP trying to find a form of evaluation to determine if and how leadership development activities make a difference (Grove et al., 2005).

Societal/Community outcomes: Program results where participants have influence either individually, directly, or indirectly through the organizations in which they are affiliated, including neighborhoods, communities, social or professional networks, or sectors of society (Black & Earnest, 2009; Grove et al., 2005). Grove et al. (2007) suggest that societal/community outcomes are often the mission of leadership development programs.

Assumptions

The researcher assumed that the NCTTFC ALDP alumni who participated in the study provided honest, accurate, and truthful responses to the statements and questions presented concerning their thoughts, perceptions, experiences, and involvement regarding leadership and leadership development. The researcher also presumed that the research participants would understand the questions as intended. Finally, it is assumed that the research participants would welcome the opportunity to be heard as individuals and to reflect upon their participation in the NCTTFC ALDP. All responses were confidential with any identifying information removed.

Limitations

This study was limited to the 30 participants in the 2017-2019 cohort of the NCTTFC ALDP and focused on understanding the outcomes and impacts experienced due to their involvement in the program. Therefore, the results of this study are limited to this specific cohort and cannot be generalized to all alumni of the program. Some factors contributing to their experience may be unique to this group only and may not be transferable to individuals outside of this population. Data obtained consist of perceptions of the respondents. It is possible that sources of variability exist due to respondents self-reporting the data, resulting in reduced validity. This study utilized quantitative survey methodology, limiting the ability of the researcher to deeply understand each participant's point of view as compared to qualitative research methodology. An additional study is needed to explore formative information that could be used to improve the planning and implementation of the program.

Chapter Summary

Agriculture throughout North Carolina and the United States has evolved and developed over the years. Today, less than 2% of the United States population is involved in production

agriculture. In 1965, the W. K. Kellogg Foundation funded the Kellogg Farmers Study Program in conjunction with the Cooperative Extension Service at Michigan State University. This led to the creation of a variety of different leadership development programs for agriculture and rural communities. This study focuses on the NCTTFC ALDP and examines the perceptions of the 2017-2019 program alumni regarding their personal, business/professional, and societal/community level leadership development.

The following research questions guided this study: (1) What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?; (2) Where did the program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?; (3) Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program?; and (4) Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program? In addition to providing a background to the study, Chapter 1 also provided a description of the purpose of the study, significance of the study, definitions, assumptions, and limitations.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this study was to gain a better understanding of how the NCTTFC ALDP program alumni have improved their leadership skills personally, in their businesses, and throughout their communities. Bandura's (1977, 1986) social learning theory, Knowles' (1970, 1980, 1984) andragogical model, Birkenholz's (1999) adult learning principles, and Black's (2006) theoretical model of leadership are explained in addition to a review of literature on the following topics:

- Importance of Agricultural Leadership Development
- Objectives and Topics Covered in Leadership Development Programs
- Components of Leadership Development Programs
- Impacts and Outcomes of Agricultural Leadership Programs, Rural Development Programs, and Community Leadership Programs
- Leadership Development Program Evaluation and the EvaluLEAD Framework

Theoretical Framework

Bandura's Social Learning Theory

Social learning theory, also known as observational learning, was founded by Albert Bandura (1977, 1986). This theory suggests that people learn behavior based on modeling, where individuals learn from others by observing behaviors and imitating them (Bandura, 1977). This concept, called observational learning, is governed by four processes of attention, retention, behavior production, and motivation (Bandura, 1977, 1986). Bandura (1977) suggests:

Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most

human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action. (p. 22)

Bandura's work is centered on the concept that an individual's response to a behavior is regulated through thinking, or cognitive processes. Bandura explains that a person's thought processes impact their behavior when combined with the social experiences that an individual has been exposed to. When individuals make observations and experience aspects of their environment, they are then able to establish new behaviors that often impact them beyond their exposed levels (Bandura, 1977, 1986). Bandura calls these symbolic environments and states that these can be comprised of individuals or the mass media. According to Bandura (1986), there could be a period of time between the cause and effect of a specific learning experience.

Bandura (1986) proposed the concept of reciprocal determinism which explains how "behavior, cognitive, and other personal factors, and environmental influences all operate interactively as determinants of each other" (p. 23). Merriam et al. (2007) state, "behavior is a function of the interaction of the person with the environment. This is a reciprocal concept in that people influence their environment, which in turn influences the way they behave" (p. 289). For many years, Bandura's (1977) social learning theory has been utilized to help understand why people behave in similar but sometimes erratic ways. This theory helps people understand the cognitive process of how individuals make decisions based on their observations and the environment around them, and how this leads to behavioral choices (Davis & Luthans, 1980). Bandura (1977) provides the following explanation of how these three factors work together:

According to social learning theory, behavior is learned symbolically through central processing of response information before it is performed. By observing a model of the

desired behavior, an individual forms an idea of how response components must be combined and sequenced to produce the new behavior. In other words, people guide their actions by prior notions rather than by relying on outcomes to tell them what they must do. (p. 35)

Self-efficacy is another factor of Bandura's social learning theory that involves an individual's belief in oneself that they can succeed and accomplish challenging goals and tasks. Self-efficacy is influenced by an individual's accomplishments or failures, observations, verbal persuasion, and their emotional reactions (Bandura, 1982), and is defined as a "judgement of one's capability to accomplish a certain level of performance" (Bandura, 1986, p. 391). How individuals perceive their self-efficacy, or how competent people believe they are likely to perform in a given situation, influences the effectiveness of how individuals interact in their environment and with others (Lefrancois, 1999). Individuals who have higher levels of self-efficacy have been shown to have greater persistence to overcome challenges (Gibson, 2004).

In regard to the leadership development of adults, the three components of social learning theory (Figure 1): personal factors, environmental factors, and behavioral factors all play an important role in an individual's overall development. Adults that choose to take part in leadership development programs often interact with the program leaders and facilitators as well as other individuals that are taking part in the program. This provides an opportunity for participants to learn from the program's leaders, but also to learn from other individuals in the cohort (Lamm et al., 2016). Each participant that decides to participate in a leadership development program enters with their own set of unique experiences, as well as their own "goals, values, motives, attitude, personality, and ability" (Crittenden, 2005, p. 961).

On the environmental level, agricultural leadership development programs provide participants with the opportunity to be exposed to a variety of social, political, and economic issues on the local, state, national, and international levels through sessions and study tours. Throughout these leadership programs, participants are able to interact with a variety of individuals representing various businesses, industries, as well as government and elected officials (Kaufman et al., 2012). The environment plays an important role in ensuring that the program sessions and study tours are appropriate, enriching, and satisfying to participants (Crittenden, 2005).

The experiences from program leaders, facilitators, and participants along with the associated environmental factors encountered throughout the program would be expected to change the behavior of participants. When these factors combine, graduates from leadership development programs would be expected to have improved their knowledge and skills relating to their leadership development, positively impacting their personal and professional lives, ultimately resulting in community change.

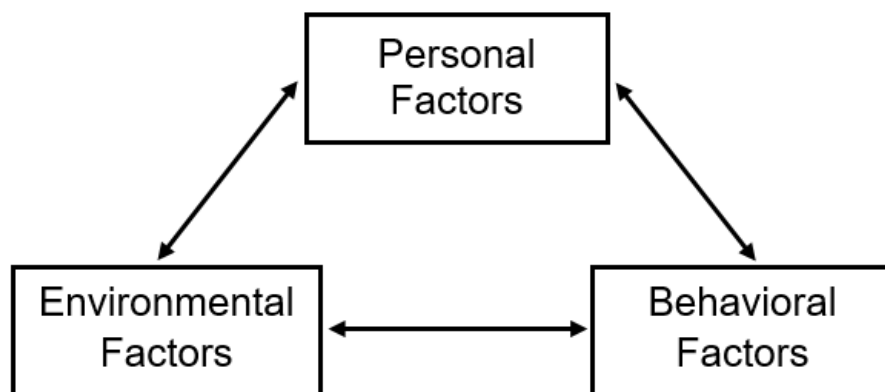


Figure 1. Social Learning Theory (Bandura, 1977)

Knowles' Andragogical Model

Malcolm Knowles is best known for his work with andragogy and introducing the term to individuals throughout the United States (Birkenholz, 1999). Andragogy is based on assumptions about the characteristics of adult learners and how they vary from the assumptions of how children learn utilizing the traditional pedagogical approach. Knowles (1980, 1984) provides that andragogy-pedagogy represents a continuum and that both educational techniques are appropriate for use at different times and situations regardless of an individual learner's age. Merriam and Cafarella (1991) state that the andragogical model proposed by Knowles is learner-centered rather than instructor-center and the learner is viewed as a mutual partner throughout the learning experience. Knowles (1980) outlines four basic characteristics conducive to helping adults learn including: 1) respect for personality; 2) participation in decision making; 3) freedom of expression and availability of information; and 4) mutuality of responsibility in defining goals, planning and conducting activities, and evaluating. In 1970, Knowles provided four assumptions about the characteristics of andragogy that differ from pedagogy, and in 1984, he added a fifth assumption to help explain how adults learn. The five assumptions on which andragogy is based include:

1. **Self-concept:** As an individual matures his/her self-concept transitions from one of being dependent toward one of being self-directed.
2. **Experience:** As an individual matures he/she accrues a growing reservoir of experiences that serve as a resource for learning.
3. **Readiness to learn:** As an individual matures his/her readiness to learn becomes aligned to the developmental tasks associated with his/her social roles.

4. Orientation to learning: As an individual matures his/her perspective changes from a postponed application of knowledge to one of immediate application, and his/her orientation toward learning shifts from one of being subject-centered to one of a life-centered, task-centered, or problem-centered approach.
5. Motivation to learn: As an individual matures their motivation to learn becomes more internally focused rather than external. Adults become more motivated to learn if they are able to increase their self-esteem, self-confidence, quality of life, etc.

Self-concept

As children mature from a child to an adult, their self-concept also evolves and matures. Children move from being dependent on others to being self-driven and independent. When individuals mature, this leads to growing independence and autonomy. In regard to children who are dependent on others for learning and understanding, adults have the ability to become self-directed learners who learn and understand independently. Knowles (1970, 1980, 1984) provides that all adults should be treated with respect, involved in mutual inquiry, and be given responsibility for their own learning to maximize the benefits of the learning or training experience.

Experience

Adults enter educational or training programs with a vast range of experiences and the quantity of these experiences becomes a resource for learning throughout these programs. Adults often derive their self-identity from their experiences and frequently describe themselves by their occupations, where they have traveled, what their accomplishments are, or what they have done (Knowles, 1970, 1980). In contrast to children, who have very little experiences and must rely on the experiences of others, children view an experience as something that happens to them, as an

external event that affects him/her, not an integral part that defines who he/she is. A child's self-identity is mainly derived from external sources. On the other hand, adults often have more to contribute to the learning of others, can relate new experiences to past experiences, and they tend to be less open-minded (Knowles, 1970, 1980, 1984).

Readiness to Learn

As an adult assumes various social roles including employee, parent, spouse, citizen, etc., their readiness to learn becomes aligned toward those specific roles. "Adults become ready to learn when they experience a need to know or do something in order to perform more effectively in some aspect of their lives" (Knowles, 1984). Sources of readiness to learn are generally correlated with the developmental tasks associated with moving from one stage of development to another. However, Knowles (1980, 1984) suggests that the readiness to learn can be induced through exposing learners to role models, engaging them in career planning, and providing experiences where they can gauge and move from where they are currently to where they want to be.

Orientation to Learning

Adults and children enter educational settings in different ways. Children most often view their education as subject-centered with postponed application. Younger individuals view the educational process as the accumulation of subject matter that will be useful to them later in life. However, adults decide to participate in educational programs after they have experienced a need for the educational training and can apply it to their personal lives. They often enter these programs with a life-centered, task-centered, or problem-centered mindset (Knowles 1970, 1980). Adults often do not learn for the sake of learning, but rather choose to participate in

educational programs to learn how “to perform a task, solve a problem, or live in a more satisfying way” (Knowles, 1984, p. 12).

Motivation to Learn

Typically, children are motivated externally to learn, and adults are motivated internally to learn. Children are motivated primarily by external pressures from parents and teachers through the competition for grades and consequences of failure. In regard to adults, the andragogical model asserts that individuals are motivated internally with a desire to increase their self-esteem, self-confidence, self-actualization, recognition, or to improve their quality of life, among many others (Knowles, 1984).

Howell et al. (1982) states that the common components of the first four rural leadership development programs were consistent with the principals identified by Knowles (1960). Many of the early agricultural and rural leadership development programs lead to the development of the programs that are operating today. These programs continue to impact agriculture and rural communities by providing leadership training for adults and professionals involved in agriculture and the surrounding industries. To begin, these programs are problem-centered and focus on public issues that occur on the local, state, national, and international levels in addition to focusing on the development of leadership and communication skills of participants. Second, the programs are experience centered with experiential learning methods employed throughout their duration (Howell et al., 1982). These experiential learning methods allow participants to expand on their previous knowledge while also gaining new insights and understanding of the issues discussed.

Third, the topics and experiences planned throughout these programs are strategically designed to benefit participants’ overall leadership development and appear to be meaningful due

to the participants' positive ratings of these programs. Lastly, over the duration of the program, participants are encouraged to have an open mindset and to view all aspects of the program objectively due to each segment providing opportunities for each individual to evaluate content, methods, and identify resource persons that will be beneficial to their leadership development and goal attainment (Howell et al., 1982). Program leaders and facilitators continue to utilize Knowles' (1984) andragogical model to develop and implement agricultural and rural leadership development programs to maximize adult learning and to ensure that participants are gaining the most from their experience within these types of programs.

Birkenholz's Adult Learning Principles

As previously discussed, adult learners can be distinguished from youth in that adult learners generally participate in educational programs on a voluntary basis. Birkenholz (1999) provides four responsibilities that have an impact on adult learners. These include "being good citizens, maintaining economic stability for themselves and their families, serving in the roles of parents and adult family members, and having the responsibility to transmit social, cultural, and spiritual values to future generations" (Birkenholz, 1999, p. 26). He provides that adults who decide to participate in many adult education programs often enter with high levels of motivation. Birkenholz's (1999) eight principles of adult learning are:

1. Learning is change: Most frequently, learning is defined as a change in behavior; however, this change may not be readily observable for all individuals. Often, learning experiences will result in gradual changes in an individual's knowledge, attitudes, and thought processes. Due to the different motivations of all individuals, Birkenholz (1999) suggests that "learning is an individual process" (p. 32), and what is learned will vary among participants.

2. Adults must want to learn: If adults are required to participate in educational programs, their potential for learning decreases, whereas those who are motivated and volunteer to participate in programs are generally more successful in learning from the experience. Due to this, program leaders must develop curriculum for programs that cater to the needs and interests of the intended audience and allow participants to develop a “felt need” for the topics covered throughout the duration of the program.
3. Adults learn by doing: Adults and all individuals learn best when being directly involved in the learning process. Therefore, adult educators must develop programs that encourage individuals to participate in the experience while also allowing them to be successful. Breaking down the psychological barriers to learning will encourage individuals to become actively engaged in their learning while also equipping them to handle more challenging tasks.
4. Learning should focus on realistic problems: Educational program leaders and facilitators should provide information and training that is relevant and can be applied to the participants’ lives. Birkenholz (1999) suggests that both inductive and deductive strategies can be used to facilitate the learning experience. When deciding on the right approach, it is imperative that program leaders understand the participants’ prior knowledge and experiences to ensure the most appropriate strategy is employed, while also keeping the learners engaged.
5. Experience affects adult learning: The experiences that an individual has had can have an impact, either positively or negatively, depending on their prior experience and new learning. When an individual consumes new information, it is impacted by their prior experiences whether good or bad. Previous positive experiences enhance

the productivity of learning whereas negative prior experiences often hinder the learning of new information. Due to this, adult educators might have to engage in unlearning practices by working carefully to remove and disassemble an individual's previous experience to promote the learning of new knowledge and skills in the appropriate context.

6. Adults learn best in informal environments: Adults should be included in the creation and development of rules and policies for behavior so they know what is expected of them. Birkenholz (1999) states that these rules and guidelines should not be strict and rigid, but broad for adult learners. He also points out the importance of providing time for breaks when planning various sessions of an adult education program. These opportunities provide time for participants to ask questions and interact with each other, the facilitators, or other individuals that are present.
7. Use variety in teaching adults: Adults learn best when a variety of instructional methods and strategies that utilize the maximum number of senses including seeing, hearing, feeling, tasting, etc. are used throughout the learning experience. When these instructional methods and strategies are employed in adult educational programs, a greater amount of information can be obtained and retained.
8. Adults want guidance not grades: Birkenholz (1999) states that adult educators should avoid rigorous standards when they are not required. Individuals who participate in adult education programs are often accepting of suggestions for improvement and generally evaluate their achievement based on individual standards and criteria. Adult educators should recognize discouragement among adult learners and provide the

appropriate affirmation, encouragement, and support when needed to keep participants focused and engaged.

Black's Theoretical Model Relating to Statewide Leadership Programs

The theoretical model relating to statewide leadership programs (Figure 2) proposed by Black (2006) attempts to explore the various components of leadership development programs and their associated outcomes for adult learners. Black created this theoretical model to assist in the evaluation of statewide leadership development programs by seeking to capture the level of change experienced by program participants. To begin, the model is structured around a group of individuals that are motivated to participate and gain new knowledge from the program. Often, these adults choose to enter leadership development programs when they feel the need to know how to do something to perform more effectively throughout their lives (Knowles, 1984). Through their engagement in the leadership development program, participants have the opportunity to interact and develop social relationships with the program's leaders, facilitators, and other participants while gaining new knowledge on the topics covered (Black & Earnest, 2009).

As participants are forming social relationships with others involved in the program, they engage in a variety of experiences involving observation, modeling, cognition, and their environment (Bandura, 1977, 1986). Through the interaction of the program's context and the variety of experiences offered to participants throughout leadership development programs, changes in self-confidence, behavior, motivation, action, influential relationships, and mutual purpose can be expected. As a result, these varying components of leadership development programs contribute and lead to transformations within participants on a personal, business/professional, and societal/community level. Black and Earnest (2009) state that the

theoretical model may have processes cycling back through its various levels as personal needs or new experiences occur throughout the learning process.

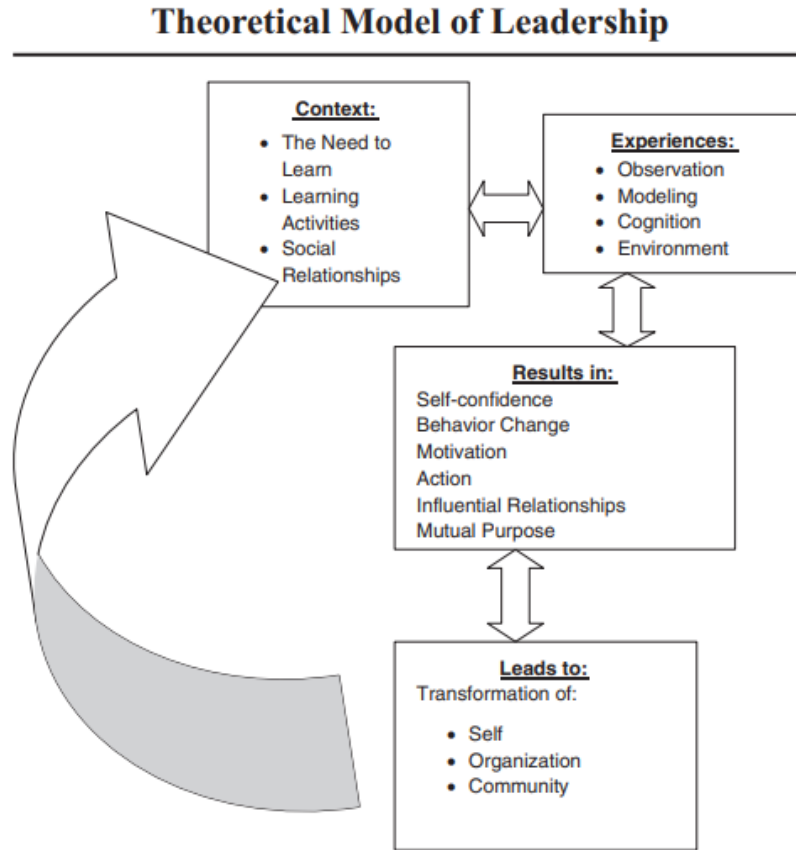


Figure 2. Theoretical Model of Leadership Relating to Statewide Leadership Programs. From A. M. Black & G. W. Earnest, 2009, p. 185.

Literature Review

Importance of Agricultural Leadership Development

Agriculture is a big industry and “business” throughout North Carolina and the nation. According to Martineau et al. (2007), leadership development can be utilized to achieve many different outcomes. Several purposes of leadership development programs include expanding the capacity of individuals to be effective in leadership roles, encouraging collaboration across

sectors and industries, and creating leaders that can accelerate change in communities and countries to solve complex issues (Martineau et al., 2007). There are many benefits of leadership development training, including enhancing individuals' leadership skills, increasing confidence, broadening perspectives, and improving communication skills (Kaufman & Carter, 2005; Kincaid & Knop, 1992; Rohs & Langone, 1993; Van De Valk, 2010; Williams, 1981).

From utilizing work animals to the advancements of mechanization, hybridization, and the introduction of chemicals, the need for leadership in each step of agricultural advancement has been critical. As the 21st century proceeds, agricultural productivity is becoming more and more important to feed the growing population with less land and resources (Jordan et al., 2013; USCEA, 2013). Humans are the driving force in which these changes and advancements occur, and many historical artifacts provide evidence that the development of civilization coincides with agricultural development (Jordan et al., 2013). Today, due to the advancements in technology and agriculture, more people have become disengaged from this vast industry. Over the years, agriculture has evolved and its complexity has increased, involving aspects of economics, engineering, and the sciences (Jordan et al., 2013). As food and agricultural production has become interconnected over the years, there is a growing importance for each individual "piece of the puzzle" to work together effectively and efficiently. This makes it critical to develop leaders within all areas of agricultural production including: research and education; production and harvesting; commodity and trade; marketing and processing; and distribution, use, and sale of agricultural products and commodities (Jordan et al., 2013).

Due to the specialized nature of agriculture in today's climate, the need for effective leadership within the industry is important to ensure producers can manage these various changes and stay ahead in this vast industry. Since the mid-1960s agricultural leadership

development programs have provided opportunities for people involved in the agriculture industry to improve upon their leadership skills and impact the industries and communities that they are involved in (Helstowski, 2000). There are a variety of leadership development programs in existence today that are focused on improving participants' knowledge and skills to serve as leaders within the agricultural and natural resource industries (Whent & Leising, 1992), and to accelerate change within communities throughout the United States. Solansky (2010) suggests, "leadership training programs should be realistic, practical, provide an opportunity for growth, and should provide new knowledge to participants all while facing the reality that people come into the program with diverse skills, learning styles, and experiences" (p.1). Within these programs, participants are able to engage in global issues (Black et al., 2006; Kelsey & Wall, 2003), develop networking relationships (Black et al., 2006; Earnest, 1996; Kaufman & Carter, 2005; Kaufman et al., 2010, 2012; Kelsey & Wall, 2003; Maltsberger & Majee, 2012; Nistler et al., 2011; Van De Valk, 2010), experience the diversity of agriculture (Black et al., 2006; Kaufman et al., 2012), increase cultural awareness (Black & Earnest, 2009), foster community involvement (Cooper, 1985; Diem & Nikola, 2005; Earnest, 1996; Kaufman & Carter, 2005; Langone, 1992; Maltsberger & Majee, 2012; Van De Valk, 2010), and improve advocacy skills by connecting participants with government officials and policy makers (Earnest, 1996; Horner, 1984; Langone, 1992).

According to Bolton (1991), "leadership skills are not innate characteristics and, therefore, must be acquired through formal and informal training and experiences" (p. 119). Due to leadership skills being learned and not innate, many agricultural, community, and rural leadership development programs were created. Each of these programs has its own structure and format, however, many are designed to build the capacity of individuals to identify and analyze

rural problems. Hustedde and Woodard (1996) provide that improving the “capacity building” of individuals enhances the potential of people to solve problems and identify needs, resources, and opportunities by engaging citizens and organizations to improve agriculture and the lives of rural individuals.

Miller (1976) reported that two major goals of the original Kellogg Farmer Study Program were “(a) to create a better understanding of the economic, political, and social framework of American Society and (b) to apply this understanding to the complex problems and unique concerns of agriculture and rural communities” (p. 6). Agricultural, community, and rural leadership development programs are designed to produce individuals who will accept leadership positions and make a positive difference in their communities, the agricultural industry, and other organizations that they are involved in. Throughout these programs, participants learn more about social, political, and agricultural issues while receiving training in interpersonal and communication strategies (Black et al., 2006; Van De Valk, 2010). Carter and Rudd (2000) provide that:

Agriculture and natural resource leadership programs are designed to expand horizons of young leaders involved in agricultural and natural resource pursuits, by exposing them to study and experiences. Participants are exposed to leadership development and gain a knowledge that is not readily acquired through day to day agricultural and related occupations. (p. 199)

Since the creation of many agricultural leadership development programs in the 1960s, many program alumni state that due to their participation in such programs that they have been more successful in their careers, increased their public service involvement, broadened their horizons, and made a positive impact on the agricultural community (Helstowski, 2000). In a

study conducted by Robinson et al. (2007), it was found that personal skill development often assists individuals in their occupations and leadership roles by improving their ability to solve complex and multidisciplinary problems, oral and written communication skills, and their ability to work successfully in teams. According to Grove et al. (2007), “each participant or team enters the program with different skill sets, perspectives, and readiness to be influenced by the program” (p. 71). It is hoped that individuals who take part in leadership development programs will utilize their knowledge and turn it into action through exchanges in organizational and community settings in which they are involved and practice their leadership skills (Grove et al., 2007). Through the interaction of participants from various social classes, races, backgrounds, career paths, and community service, individuals are able to share their experiences and network with others (Hustedde & Woodard, 1996), ultimately developing skills that can play a pivotal role on impacting the direction of change occurring in rural and urban communities (Bolton, 1991).

Objectives and Topics Covered in Leadership Development Programs

According to an analysis conducted by Howell et al. (1982), the specific program objectives of the first four leadership development programs for young adults from rural areas were to:

- develop among participants the ability to analyze public problems critically and objectively;
- develop among participants an understanding of the economic, social, political, and cultural dimensions of public problems;
- increase the participant’s ability to solve public problems by improving his/her leadership and group participation skills; and

- increase the participant's understanding of important local, state, national, and international issues. (p. 52)

Today, many agricultural, rural, and community leadership development programs are still based on the objectives previously mentioned, with some programs focusing on other specific areas. These programs vary in format and allow participants to explore a broad range of issues impacting rural communities and the agricultural industry (Carter & Rudd, 2000). The topics and sessions covered throughout the duration of these programs are generally not sector-specific, but rather focus on the broad picture and how various factors such as education, environmental concerns, health care, families, political issues, and urban populations impact agriculture, rural communities, and the nation (Johnson, 1998). In a review of a community leadership development program, Bolton (1991) explained that the sessions included topics that helped participants understand that leadership skills can be learned, leadership styles can differ among individuals and situations, the abundance of leadership opportunities that exist in the local community, goal identification and attainment, how to maintain effective groups, building communication skills, and applying the skills and concepts learned through the program to various aspects of their lives.

Kaufman et al. (2010) suggest that agricultural leadership programs should focus on the changing agricultural industry, relationship building, and the development of transferable skills. Evaluations from previous leadership program cohorts have been examined to determine the effectiveness and impact that the participants have experienced. As a whole, these programs have played an important role in assisting participants in building their professional network by improving their advocacy and communication skills (Maltsberger & Majee, 2012; Moore & Rudd, 2004). These opportunities have helped individuals learn the importance of diversity in

these programs and how to effectively work as a team in order to solve the complex problems that agriculturalists are faced with each day (Black & Earnest, 2009; Langone, 1992; Van De Valk, 2008).

Due to increasing diversity in agriculture and related industries, it is important to prepare farmers and agriculturalists who are culturally competent to work with individuals from other cultures (Rodriguez & Lamm, 2016). According to Moore et al. (2009), there is a shortage of global leaders in the corporate world and many jobs today are tied directly to international trade. The need for agriculturalists to have a global and cultural understanding is crucial for the advancement of the industry (Wingenbach et al., 2003). Agricultural leadership programs should strive to make sure that they consider the various aspects of international agriculture.

Many agricultural and community leadership development programs have similar objectives that include: expanding leadership skills (Bolton, 1991; Carter & Rudd, 2000; Cooper, 1985; Hustedde & Woodard, 1996; Kelsey & Wall, 2003; Maltsberger & Majee, 2012; Van De Valk, 2010); developing a better understanding of people (Carter & Rudd, 2000; Hustedde & Woodard, 1996; Maltsberger & Majee, 2012); building an understanding of social, economic, and political systems (Carter & Rudd, 2000; Cooper, 1985; Kelsey & Wall, 2003; Van De Valk, 2010); increasing awareness of the agricultural industry (Kelsey & Wall, 2003; Van De Valk, 2010); analyzing and reacting to issues facing the agricultural industry, natural resources, and rural communities (Carter & Rudd, 2000; Kelsey & Wall, 2003; Van De Valk, 2010); increasing involvement and activities at the local, state, or national level (Kelsey & Wall, 2003); learning how to impact change (Carter & Rudd, 2000); improving intra and interpersonal skills (Carter & Rudd, 2000; Maltsberger & Majee, 2012; Van De Valk, 2010); establishing a foundation for life-long development and growth (Carter & Rudd, 2000; Van De Valk, 2010); and increasing

involvement and using their skills to solve problems in communities (Bolton, 1991; Hustedde & Woodard, 1996; Kelsey & Wall, 2003; Maltzberger & Majee, 2012).

These programs accomplish the specific objectives mentioned previously through covering topics that are designed to build overall leadership skills in individuals who are involved in agriculture, agribusiness, and rural communities. Participants are taught methods and encouraged to accept leadership roles through training and information to understand viewpoints and issues impacting individuals, communities, societies, cultures, and countries. Specific topics covered in these programs include communication, negotiation and conflict resolution, collaboration, strategic planning, and developing a shared vision (Maltzberger & Majee, 2012; Whent & Leising, 1992). Likewise, some programs cover topics on media training, political processes, agricultural and environmental issues, and renewable resource training (Black et al., 2006).

Components of Leadership Development Programs

Throughout leadership development programs, participants are able to engage in a variety of activities that allow them to expand their horizons, engage with others, and put their newly acquired skills into action. Due to the great variety of leadership development programs in existence today, the way each specific program operates may vary slightly, however, they generally have the same components to improve leadership skills in participants. According to Scheffert (2007), leadership development program length matters and programs lasting 18 months or longer will provide more skill and knowledge outcomes. Many of these agricultural leadership development programs are 18 to 24 months long and consist of nine to 14 institutes or seminars and study tours that allow participants to engage in experiential learning on the local, state, regional, national, and international levels (Black et al., 2006; Carter & Rudd, 2000;

Helstowski, 2000; Kelsey & Wall, 2003; Van De Valk, 2010). Often, one of the starting components of leadership development programs occurs through learning modules or seminars provided by program leaders or other facilitators to provide background and theory on leadership topics. Many of these sessions are often held on weekends, allowing participants to gain background information on fundamental leadership skills and personal development issues (Wall et al., 2005). After participating in many sessions regarding personal leadership development and issue identification, the individuals are able to take part in experiential learning where they engage with others to understand issues and factors impacting agriculture and rural communities.

Experiential learning opportunities serve as a useful and practical tool that allow adult learners to actively engage in the learning environment and take on a more active role in their overall leadership development. Participants encourage stakeholders that this component of these programs is extremely beneficial to their leadership development (Kaufman et al., 2012; Lamm et al., 2016). As stated by Knobloch (2003), individuals who are able to engage in experiential learning are able to learn through real-life experiences, developing greater critical thinking skills, and the ability to solve complex problems. By engaging in experiential learning through real-life experiences, participants apply their knowledge, engage in reflection, and then use those skills developed to generalize information outside of the specific learning environment (Lamm et al., 2011; Roberts, 2006). Earnest (1996) suggests that community leadership programs be comprised of two components, beginning with participants learning about topics of leadership and community issues, followed by the application of topics and behaviors previously covered through a class practicum or project.

Incorporating a practicum or capstone project into leadership development program curriculum has been suggested to allow participants to put into practice the skills they have

learned, while also motivating them to be involved and become effective leaders (Earnest, 1996; Hustedde & Woodard, 1996; Kaufman & Carter, 2005; Kelsey & Wall, 2003; Maltsberger & Majee, 2012; Sargent et al., 2003). Incorporating practicums into these programs can improve local involvement and participation in issues that are impacting communities and rural areas. Hustedde and Woodard (1996) state that in order for practicums to be beneficial to program participants, reflection should take place throughout the experience, with the help of a mentor. When time is devoted to the learning and reflection of practicum projects, participants involved in these programs are more likely to engage in the activities and apply what they have learned to impact their communities (Kaufman & Carter, 2005). However, the decision of incorporating a practicum into a leadership program is often limited due to the resources available to program leaders and the specific objectives of the program (Hustedde & Woodard, 1996). Whenever possible, individuals involved in these programs should be allowed to develop their own projects to execute as part of their practicum experience and develop a proposal that is approved by program leaders (Kaufman & Carter, 2005). Kaufman and Carter (2005) and Maltsberger and Majee (2012) suggest that throughout the practicum process participants will be able to practice their communication, team building, and delegation skills. Also, Kelsey and Wall (2003) state that:

Asking participants to create and implement a plan for community development within their home towns would serve to develop leadership skills, needs assessment skills, change agent skills, and increase participant impact on community development at least in the short term. By experiencing success in a community development project, participants may also become more motivated to repeat the experience and become truly effective leaders rather than bystanders in their communities. (p. 44)

In addition to these various components of leadership development programs, several program leaders suggest that incorporating alumni into programs benefit their continued leadership development and provide opportunities for current participants to engage and learn from the experiences of others. Hustedde and Woodard (1996) suggest that some leadership development programs provide special learning activities and opportunities to keep their alumni engaged and also include them in the planning of future program cohorts. In studies conducted by Fritz, et al. (2003) and Earnest (1996), it was found that leadership program alumni were interested in gaining additional training on topics surrounding “engaging others in a common vision, inspiring others, attracting the right people for the task, influencing others, generating solutions and facilitator skills” (Fritz et al., 2003, p. 10). Furthermore, alumni from leadership development programs most often prefer to attend one to two training sessions per year to improve their leadership skills (Fritz et al., 2003) and to network with other leadership program participants (Hustedde & Woodard, 1996; Maltzberger & Majee, 2012). Hustedde and Woodard (1996) suggest that program alumni should know of their expectations prior to taking part in a leadership development program and that current participants and the local community should benefit from their existence.

Carter and Rudd (2000) state that all of these components are important for teaching individuals about networking and communication skills; policy and the political system; instilling a broader perspective of agriculture and natural resources; issue identification; increasing involvement with local boards and organizations; and appreciating the diversity of all people. However, to accomplish these stated objectives, Earnest (1996) urges program leaders to reduce the amount of content, allow more time for interaction and discussion, and to increase the community’s awareness of the program. Through providing experiential learning opportunities,

implementing a practicum or class project, allowing ample time for discussion, and keeping alumni engaged, leadership development programs can serve an important function of providing participants with the knowledge and skills needed to become effective leaders. Leadership development programs must be structured strategically for adult learners to gain important skills while also providing them the opportunity to put these skills into practice, ultimately equipping them with the tools needed to successfully impact change within their personal lives, careers, industries, and communities.

Impacts and Outcomes of Agricultural Leadership Programs, Rural Development Programs, and Community Leadership Programs

Agricultural leadership development program alumni report that they have gained valuable skills from participating in these programs. Many participants state that due to their involvement, they have been more successful in their careers, involved in public service, broadened their horizons, and have made a positive impact on agricultural issues and policies (Helstowski, 2000). Alumni, their spouses, and their colleagues stated that improved networking, increased leadership skills, broadened perspectives, issue identification, problem-solving, appreciation of diversity, and the desire to learn and develop were the major benefits of the Florida Leadership Program for Agriculture and Natural Resources (Carter & Rudd, 2000). Respondents from the California Agricultural Leadership Program twenty-year evaluation reported that they increased their local community involvement, attained state association positions and that the program helped them advance in their careers (Whent & Leising, 1992). Those who had participated in the program stated that they were able to increase their circle of contacts, develop friendships with classmates, increase leadership skills, experience more through the travel component of the program, interact with government officials and agricultural

leaders, and develop a greater understanding of societies and cultures (Whent & Leising, 1992). According to Rohs and Langone (1993), participants that completed the Community Leadership: A County Perspective reported that they had become further engaged in their communities, were more informed about local issues, and that the program served as a catalyst to influence program alumni leadership. These individuals became involved in a variety of different opportunities including land use and zoning, economic development, health care, agriculture and agribusiness, public housing, and downtown revitalization (Rohs & Langone, 1993).

Many leadership development programs exist throughout the United States and Earnest (1996) reports that even though the programs vary in format and length, the outcomes from each program are similar. Many benefits and outcomes of these programs include improved communication skills (Earnest, 1996; Maltsberger & Majee, 2012; Van De Valk, 2010), networking (Earnest, 1996; Maltsberger & Majee, 2012; Van De Valk, 2010), increased self-confidence and self-esteem (Earnest, 1996; Helstowski, 2000; Maltsberger & Majee, 2012); community awareness and improving their communities (Earnest, 1996; Maltsberger & Majee, 2012; Rohs & Langone, 1993), broadened perspectives (Carter & Rudd, 2000; Earnest, 1996; Van De Valk, 2010), improved group/team dynamics (Earnest, 1996; Maltsberger & Majee, 2012), improved problem-solving strategies (Earnest, 1996; Rohs & Langone, 1993), improved motivation and risk taking, understanding and interacting with others (Earnest, 1996; Helstowski, 2000), learning to adapt their leadership style depending on the situation (Bolton, 1991; Earnest, 1996), encouraging others to take on leadership roles (Earnest, 1996), interaction with government officials and agencies (Earnest, 1996; Helstowski, 2000; Van De Valk, 2010), expanded individual leadership skills (Helstowski, 2000; Maltsberger & Majee, 2012; Van De

Valk, 2010), and improved participants' effectiveness in the workplace (Maltsberger & Majee, 2012).

Even though there have been many evaluations conducted on the benefits of leadership development programs, an evaluation conducted by Black et al. (2006) reported that several participants mentioned that a drawback of completing leadership development programs was the time commitment and being away from their families. Additionally, several participants from an Ohio leadership development program noted that divorces and problems with their spouses occurred due to the time spent away from their families while taking part in these opportunities (Black et al., 2006). Furthermore, Dhanakumar et al. (1996) found that the greater a participant's level of income, the lower his/her level of participation in the local community and enhancing the leadership capacities of others. The researchers propose that leadership development may result in less community participation for those of higher economic status than those of lower economic status (Dhanakumar et al., 1996). All in all, graduates of leadership development programs are often able to develop the necessary skills to break down community silos of isolation and build inclusive networks through shared leadership and networking, ultimately benefiting themselves, their families, businesses, and communities (Maltsberger & Majee, 2012).

Leadership Development Program Evaluation

According to Helstowski (2000), agricultural leadership development programs have graduated over 7,200 participants and have received more than 15 million dollars in financial donations and contributions. Over the years, it appears that those involved with rural leadership development programs have *not* been publishing research or evaluation findings, preventing others from benefiting from the lessons learned through these programs (Henjy, 2010; Kaufman & Rudd, 2006). With the large amount of support that has been provided to these programs over

the years, those who contribute financially to these programs are now interested in the return on investment and how they are benefiting the participants involved (Kaufman & Rudd, 2006; Rohs & Langone, 1993). The evaluation of leadership development programs serves as an important source of accountability for these programs so that stakeholders, participants, and donors understand the benefits they provide, while also ensuring their continued support (Rohs & Langone, 1993).

Many critics of leadership development programs claim that not much thought goes into their planning and coordinating but rather they are entertaining to participants. These individuals assert that little effort is put towards a change in behavior, attitudes, ideas, or skills of the participants involved (Hustedde & Woodard, 1996). According to Kelsey and Wall (2003), “agricultural leadership program efficacy has been determined by a number of studies; however, most have not reported on the impacts that program participants have had on actual community leadership” (p. 35). There are an array of leadership development programs in existence today designed to help individuals understand issues impacting agriculture, rural communities, and society, while also equipping them with the skills needed to assume leadership roles and generate change in their communities (Daugherty & Williams, 1997). Generally, the outcomes for various community, rural, and agricultural leadership development programs have been varied. From previous evaluations conducted on these various leadership development programs, some have found that they are producing alumni that are making a difference in their communities, however, others urge that many of these programs are not providing participants with the skills and resources needed to become actively engaged on a societal level. Furthermore, several evaluations from different programs have stated that participants did not learn the necessary skills to become community leaders. Rather, those who did feel that they had gained the

necessary skills to become leaders in their communities did not take an active role in community development or other leadership positions (Bolton, 1991; Kaufman & Carter, 2005; Kelsey & Wall, 2003; Lamm et al., 2016).

Russon and Reinelt (2004) report that leadership program staff who engage in program evaluation often focus on the program's impacts and outcomes in regard to the individual, organizational, and community levels. They also noted that few programs have a program theory, or "a description of how and why a set of activities are expected to lead to outcomes and impacts" (Russon & Reinelt, 2004, p. 105). From an evaluation of 55 leadership development programs completed by Reinelt, Foster, and Sullivan (2002) for the W. K. Kellogg Foundation, it was determined that the programs were mindful of the importance of organizational and societal/community level results, even though some of these programs were not able to show documentation of participant improvement in these areas. Through community development programs, individuals learn skills that can play a pivotal role in making a positive impact on the direction of change occurring in rural and urban communities (Bolton, 1991). Leadership development programs are designed to involve all people including different races, social classes, backgrounds, career paths, and community service, allowing individuals to share their experiences and network with others. Hustedde and Woodard (1996) report that those involved in planning these rural development programs should ensure that all populations are represented to prevent fostering any divisions within the respective communities.

Black et al. (2006) completed a qualitative study on two statewide agricultural and leadership development programs utilizing the EvaluLEAD framework developed by Grove et al. (2005) to explore participants' outcomes on an individual, organizational, and community level. On the individual level, participants reported that they had improved their self-confidence,

became more cognizant to others needs and issues, learned they did not have to be in control, broadened their horizons, learned to appreciate what others could bring to the table, and became more aware of issues on a local, state, and national level. At the organizational level, participants provided that they were able to network with other business leaders and improve their management strategies. In addition, they were able to implement changes in their businesses and organizations and bring new ideas to help improve or expand their operations. Last, at the community level, participants became officers in community and agricultural organizations, wrote legislation and grants, learned the importance of saying “no,” developed a wider circle of influence, improved their consensus-building skills on issues impacting their communities, and increased cultural awareness. Participants also noted that they gained a greater appreciation for diversity and that the international study tour broadened their perspectives (Black et al., 2006).

As noted from the previous evaluations conducted on leadership development programs, the results vary depending on the specific program. Evaluation serves as an important tool for these various programs, allowing program leaders and stakeholders to analyze whether each program is meeting its targeted goals and objectives. Over the years, due to little research being conducted and published on leadership development programs, Grove et al. (2005) developed the EvaluLEAD framework to assist with the evaluation of these programs to ensure that program success can be achieved or improved if needed. The EvaluLEAD framework was utilized in this study to examine the outcomes of the NCTTFC ALDP on the individual, organizational, and societal/community levels.

EvaluLEAD Framework

The EvaluLEAD framework is a method of evaluating program outcomes and was designed to aid those involved in leadership development to assist in documenting program

results. This framework was developed by Grove et al. (2005) in conjunction with the Public Health Institute and supported by funding from the W. K. Kellogg Foundation (Black et al., 2006). The methodology utilized through the creation of the EvaluLEAD framework notes that as an increasing number of graduates complete a leadership development program and start utilizing their new knowledge, “there is a corresponding increase in the quantity, quality, variety, and duration of outputs, outcomes, and impacts whose emergence they may have helped influence” (Grove et al., 2005, p. 1).

The EvaluLEAD methodology was developed originally for use in the public health sector, however, the model can be applied to programs across various contexts and disciplines. Grove et al. (2007) suggest that program evaluations should explore the areas in which program participants interact rather than focusing solely on the individual level. Examining these other factors places a “primary focus on what the program is doing while working with participants to seed (not directly cause) change in these more distal arenas” (Grove et al., 2007, p. 72).

Through an open-systems perspective, the framework assumes that systematic evaluations of leadership programs provide the opportunity to lead to findings that could not have been foreseen based on the unique and personal nature of participants (Grove et al., 2005). Due to this approach, program leaders and stakeholders are better able to generate a realistic overall picture of leadership development programs. In addition, Grove et al. (2007) reports that using an open-systems perspective to evaluate leadership development programs allows those evaluating the program to recognize that participants also experience a myriad of stimuli not directly resulting from the program. Employing this approach allows for greater feedback to program leaders and stakeholders so that they can be better informed of the productivity and potentials of the program, what is needed to increase output, and the results of the program

(Grove et al., 2007). The data collected can be used by stakeholders and program leaders to become better informed about a program's results and serves to provide insight as to how the program can be improved for future cohorts.

Evaluations allow changes to be made to better structure the program to serve the needs of participants so that the outcomes of the program can be maximized (Grove et al., 2007).

Grove et al. (2007) explain that the EvaluLEAD framework has the following three purposes:

1. To better understand the direct linkages and more casual (not causal) associations among varied results observed in the individual, organizational, and societal domains
2. To gain an overall sense from observed patterns and examples of how a program works to accomplish its objectives and broader mission
3. To share these understandings with key program stakeholders and use them as a basis for modest to major program enhancements (Grove et al., 2007, p. 77)

The EvaluLEAD framework is a useful tool that serves to explore outcomes of leadership development programs on the individual, organizational, and societal/community levels. Black and Earnest (2009) adapted the EvaluLEAD framework into an EvaluLEAD conceptual model for use in evaluating a specific agricultural leadership development program. The conceptual model (Figure 3) contains nine leadership program outcomes across three types of results including episodic, developmental, and transformative.

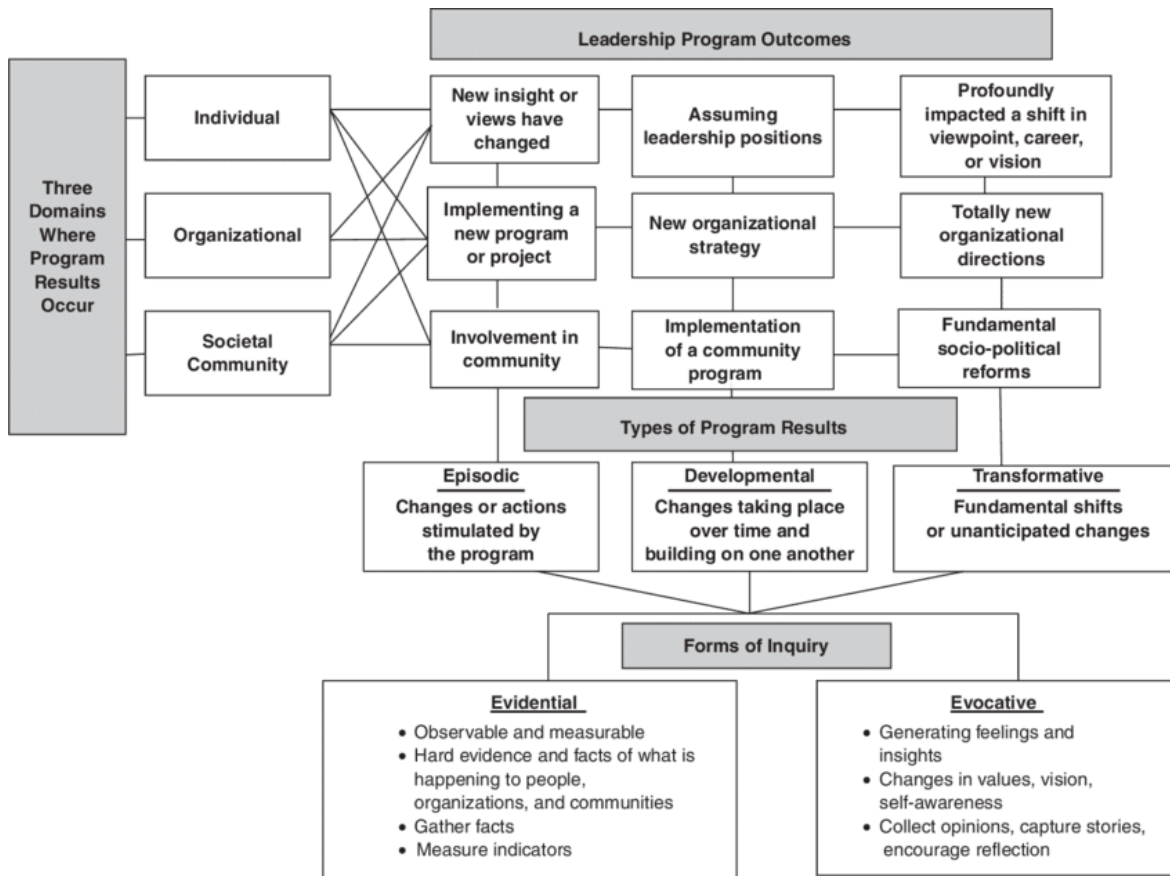


Figure 3: EvaluLEAD Conceptual Model. Adapted by Black and Earnest (2009) based on the work of Grove et al. (2005). From A. M. Black & G. W. Earnest, 2009, p. 187.

EvaluLEAD is centered on four parameters of analysis including context, result types, domains, and forms of inquiry. Result types refer to the forms of change expected from the program, including episodic, developmental, and transformative. The next parameter includes the domains of impact or the areas where a leadership development program’s results occur. These are identified as the individual, organizational, and societal/community levels. Third, are the forms of inquiry that can be used to determine and clarify the results of a program using evidential and evocative approaches, resulting in a better understanding and comprehension of the impact of the program. Last, context is examined which “refers to the purposes, assumptions,

and expectations surrounding both leadership as defined by the project and the evaluation process” (Grove et al., 2007, p. 78). Grove et al. (2005) state that context must be considered when exploring program results and serves as a reference point for planning, data collection, and analysis of a specific program. A program’s context serves an important purpose of recognizing that leadership may be expressed in different forms based on each individual. Context informs decisions about which types of results in each of the domains should be given priority and featured in the evaluation (Grove et al., 2005, 2007).

Grove et al. (2005, 2007) state that the EvaluLEAD framework focuses on three types of results including episodic, developmental, and transformative. Episodic results are generally cause and effect with observable results following the intervention made and could include knowledge gained, application of skills, etc. Developmental changes happen over time, are less predictable, and are represented by the steps taken to work towards challenging outcomes. Examples include changes in individual behavior and utilization of a new operational strategy. Last, transformative changes deal with foundational shifts in individual, organizational or community values and represent regenerative moments or profound changes that occur because of the program. Transformative results can include changes in viewpoint, career shifts, or changing the direction of a business or organization (Grove et al., 2005, 2007).

Through the EvaluLEAD framework, results are examined in regard to three domains of impact including the individual, organizational, and societal/community levels. The individual level is where most of the benefits of leadership development programs occur and might be expected from current participants, graduates, and others that are associated with those who are involved or have completed the program. Next, the organizational level is where program associated results may occur within the home organizations of participants or within outside

organizations where participants, graduates, or their organizations interact. Lastly, the societal/community domain refers to the neighborhoods, communities, networks, sectors of society, or other areas to which program participants or graduates may have an impact. This level of the framework is often thought of as the mission or most important reason for leadership development programs (Grove et al., 2005, 2007). Furthermore, since learning is always occurring and there are feedback loops among individuals, their organizations, and their communities, Grove et al. (2005, 2007) note that change can be simultaneous across multiple domains of the framework.

To better understand if and how the program has had an impact on individuals, their organizations, and their communities, the EvaluLEAD framework encourages the use of both evidential and evocative inquiry. Evidential inquiry seeks to capture descriptive, numeric, and physical evidence through quantitative and qualitative methods to present data on how the program is impacting current participants or alumni. The use of evocative inquiry seeks to gain feedback from participants or those who benefited from their participation in the program, either directly or as beneficiaries. This feedback is often collected through open-ended surveys, stories, viewpoints, journals, etc. to allow for a greater understanding of the program's impact on participants. These types of inquiries strive to capture some of the richness of what is happening or has occurred throughout the program, strengthening insight and improving comprehension regarding the program and its outcomes (Grove et al., 2005, 2007). Grove and the Population Leadership Program (PLP) team (2002) state that descriptive data are critical for program evaluation, however, stories and interpretive approaches serve important purposes as well. Overall, leadership development programs strive "to improve activities that sustain the

achievement of positive outcomes for organizations, communities, and countries by individuals” (Grove & PLP team, 2002, p. 2).

Chapter Summary

This chapter examined Bandura’s social learning theory, Knowles’ andragogical model, Birkenholz’s adult learning principles, and Black’s theoretical model relating to statewide leadership programs in addition to a review of relevant literature surrounding adult leadership development programs. The topics examined included the importance of leadership training, objectives and topics covered in leadership development programs, components of leadership development programs, impacts and outcomes of leadership development programs, program evaluation, and the EvaluLEAD Framework. There are many leadership development programs throughout the United States designed to develop leadership skills on a personal, business/professional, and societal/community level. Adult leadership development programs benefit participants through participation in experiential learning methods as well as providing opportunities for participants to interact with a variety of individuals involved in agriculture, governmental organizations, and other related industries and associations connected to agriculture. This study aims to add to the current literature surrounding agricultural leadership development and the EvaluLEAD framework.

CHAPTER 3

METHODOLOGY

Purpose

The purpose of this chapter is to explain how this study was designed and implemented. Reasons for selecting the specific research design will be addressed, followed by an in-depth look at the specific methodology for this study. The purpose of this study was to examine the change in leadership skills of the 2017-2019 NCTTFC ALDP cohort on the personal, business/professional, and societal/community levels. A questionnaire was developed with quantitative scales and open-ended questions to triangulate the necessary data. This study used a retrospective pre-test post-test survey research design to document how participant's leadership skills had improved over the course of the program. This chapter provides additional information on the methods used for implementing this research study through the research design, population, and instrumentation utilized. Data collection, data analysis, the pilot test, validity, and reliability are also discussed in this chapter.

The following research questions guided this study:

1. What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?
2. Where did the program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?
3. Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program?

4. Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program?

Research Design

The research design of this quantitative survey research project was meant to be descriptive in nature. This study utilized a retrospective pre-test post-test survey research design to understand how participants of the 2017-2019 NCTTFC ALDP cohort improved their leadership skills on a personal, business/professional, and societal/community level. In order to determine the change experienced by program participants from completing the NCTTFC ALDP, this design was deemed appropriate. The retrospective pre-test post-test design is often used in program evaluation to control for response shift bias where the participants of a program self-report their current knowledge, behavior, or attitudes after completing a program and then report where they perceived themselves to be when the program began (Goedhart & Hoogstraten, 1992; Terborg et al., 1980). Response shift bias occurs when a participant inaccurately reports their knowledge due to misunderstanding and undeveloped thought processes that are clarified over the course of a training or educational program (Rockwell & Kohn, 1989). In addition, Pratt et al. (2000) state that this method is time-efficient and can reduce other sources of bias involving participants in educational or training sessions.

This study mainly utilized quantitative methods to collect data from participants using an online survey. Several open-ended questions were used throughout the questionnaire to collect additional data from the 2017-2019 program alumni and to assist in triangulating program outcomes. The survey was distributed to participants using Qualtrics, an online survey software program available to NC State students, faculty, and staff. The use of an internet survey was

deemed as a viable option due to the low cost efficiency (Sue & Ritter, 2012). This study was conducted with approval from the Institutional Review Board (IRB) at NC State to conduct research on human subjects and was assigned an exempt status (IRB Protocol 20298) on October 2, 2019.

Research Variables

The specific variables examined in this study were divided into the three levels of outcomes including personal, business/professional, and societal/community.

1. Personal level variables – community involvement, self-confidence, creative thinking, critical thinking, business skills, value of time, value of family, exposure to new ideas and concepts, appreciation of cultural differences, and desire to seek out a mentor
2. Business/professional level variables – business/organizational decision making skills, networking, innovativeness, problem solving, use of time, involvement in professional organizations, and resourcefulness
3. Societal/community level variables –involvement with groups/issues (local, state, national, and international level), awareness of the diversity of North Carolina agriculture, budgeting within communities, effective use of time, and understanding an individual’s values and its impact on community development

Study Population

All individuals from the 2017-2019 cohort of the NCTTFC ALDP were asked to participate in this study. Contact information for these individuals was retrieved from the directory of the agricultural leadership development program available through the program website. The only information obtained by the researcher for this study was the email addresses for the 2017-2019 program alumni. This was a population study. The population for this study

was all of the graduates of the leadership program and the study population consisted of the entire 2017-2019 alumni class which included 30 individuals representing various sectors of the agricultural industry throughout North Carolina.

Instrumentation

The instrument used to determine the improvement in leadership skills in participants was developed based on the work of Black (2006). The questionnaire consisted of three main sections corresponding to outcomes on the personal, business/professional, and societal/community levels (see Appendix C). The instrument was developed by the researcher and a panel of experts in agricultural leadership development, extension education, and program evaluation to ensure content and face validity. There were 42 statements/questions presented throughout the entire instrument, however, many of these questions were organized in matrices. The instrument included categorical, Likert-type, closed, and open-ended questions that were organized into the personal, business/professional, and societal/community levels. Due to the set-up and organization of the instrument, it took respondents approximately 15-20 minutes to complete.

Throughout the instrument, there were Likert-type scales for the personal, business/professional, and societal/community levels. The items in the instrument were set up in a pre-test post-test format and followed a five-point Likert-type scale (0 = *very low*, 1 = *low*, 2 = *moderate*, 3 = *high*, 4 = *very high*). Additional data were collected using another five-point Likert-type scale (0 = *strongly disagree*, 1 = *disagree*, 2 = *neutral*, 3 = *agree*, 4 = *strongly agree*) that measured the respondents level of agreement of their improvement after completing the program related to personal and business/professional level leadership development.

Part One: Personal Level

Part one of the instrument consisted of a five-point Likert-type scale with 10 statements concerning each participant's individual leadership development in regard to their community involvement, self-confidence, creative thinking, business skills, value of time, value of family, exposure to new ideas and concepts, critical thinking skills, appreciation of cultural differences, and seeking out a mentor (see the instrument in Appendix C). Respondents were also provided another five-point Likert-type scale to respond according to their agreement to four prompts regarding possible changes on a personal level since completing the program. A "yes/no" question was included for respondents to reply if they had improved on a personal level because of their NCTTFC ALDP experience. If the participant chose "yes," they were directed to an open-ended question where they were asked to describe their personal improvement. An additional question asked participants if they had decided to pursue further formal education as a result of their NCTTFC ALDP experience. If "yes" was selected, the participant was able to report what degree or certification that they had completed or were working towards.

Part Two: Business/Professional Level

For the business/professional level section, a five-point Likert-type scale was used with seven variables focusing on business/organizational decision making skills, networking, adaptability, problem solving, time management, involvement in organizations, and use of resources. Respondents were also provided an additional five-point Likert-type scale regarding their agreement to three prompts involving possible changes in their business/professional involvement since completing the program. A "yes/no" question was included for respondents to reply if they had improved on a business/professional level because of their NCTTFC ALDP experience. If the participant chose "yes," they were directed to an open-ended question where

they were asked to describe their business/professional improvement. In addition, the participants were asked another “yes/no” question if they had changed careers as a result of their NCTTFC ALDP experience. If the respondent chose “yes,” they were provided an additional question asking them to explain the career change that they made.

Part Three: Societal/Community Level

The third section of the instrument consisted of statements to measure how respondents improved on a societal/community level due to their participation in the program. This section consisted of a five-point Likert-type scale with eight variables including local involvement, state involvement, national involvement, international involvement, awareness of the diversity of North Carolina agriculture, budgeting in communities, efficient use of time, and their understanding of an individual’s values and its impact on community development. A “yes/no” question was included for respondents to reply if they had improved on a societal/community level because of their NCTTFC ALDP experience. If the participant chose “yes,” they were directed to an open-ended question where they were asked to elaborate on how they improved on a societal/community level. In addition, the respondents were provided with another open-ended question and asked to describe any community projects that they had initiated or championed because of their experience in the NCTTFC ALDP.

To complete the societal/community level section of the instrument, participants were asked to indicate their involvement in organizations before and after completing the NCTTFC ALDP. Respondents could list up to five organizations and were able to indicate if they were a member or committee member/officer at the local, state, or national level in these organizations before and after graduating from the program. In addition to the organizational involvement chart, participants were asked if they held any elected government positions. If “yes” was

selected, respondents were prompted to provide the position(s) held. The final information gathered from the instrument asked participants to rank the level of change, on an eleven-point scale (0 = *no change* – 10 = *immense change*), that they experienced because of the program and provided them the opportunity to share any additional information regarding their participation in the NCTTFC ALDP. These questions were included to gather supplementary information that respondents were not able to share while completing the instrument.

Pilot Test

A panel of experts, consisting of three professors in the Department of Agricultural and Human Sciences at NC State specializing in agricultural leadership development, extension education, and program evaluation reviewed the instrument for content and face validity before it was distributed to participants. Appropriate changes were made to the instrument based on input from these experts before the distribution of the questionnaire. The instrument developed was created into a Qualtrics web-based questionnaire for ease of distribution and use.

A pilot test was conducted before distributing the instrument to the 2017-2019 graduates of the NCTTFC ALDP. The pilot test consisted of a census of 36 alumni from the 2014-2016 cohort. Twenty responses were received, and it was decided that a response rate of 55.55% ($n = 20$) was appropriate for the pilot test. These data were critical to finalize the constructs of the quantitative questionnaire and informed considerations for final survey distribution and data collection. In addition to the suggestions provided, the questions from the pilot test were placed into a reliability analysis to compute Cronbach's alpha coefficients using the IBM Statistical Package for the Social Sciences (SPSS) for the personal, business/professional, and societal/community levels of the outcome recording instrument.

Reliability

A Cronbach's alpha reliability analysis was conducted with the pilot test data to ensure the items included in the questionnaire were reliable. A Cronbach's alpha is a measure of the internal reliability or consistency of the items in an instrument and scores above 0.7 suggest that the items in an index are measuring the same thing (Vogt, 2005). Cronbach's alpha typically ranges between 0 and 1 with an alpha 0.90 or greater considered *excellent*, 0.80 and above considered *good*, 0.70 and above considered *acceptable*, 0.60 and above considered *questionable*, 0.50 and above considered *poor*, and below 0.50 considered *unacceptable* (George & Mallery, 2011). For part one of the instrument, a Cronbach's alpha of .84 was calculated for the ten statements regarding the personal level. Part two of the instrument yielded a Cronbach's alpha of .81 for the seven statements measuring business/professional leadership development growth. Lastly, part three of the instrument yielded a Cronbach's alpha of .89 for the eight statements regarding societal/community involvement. All of the Cronbach's alphas for the instrument utilized in this study were considered good and higher than .80 (George & Mallery, 2011). A few minor adjustments to the layout and wording of the instrument were made prior to distribution and data collection for the final research study.

Data Collection

Before beginning any of the research procedures involving participants, permission was granted by NC State IRB. The Tailored Design Method was followed throughout the data collection process for the distribution of the questionnaire and communication with the participants (Dillman et al., 2014). The data collection process began with an initial email and survey invitation explaining the purpose of the research study and asking participants for their input regarding their involvement in the NCTTFC ALDP. The guidelines presented in Dillman et

al. (2014) were followed for each of the reminder emails sent to the participants, emphasizing the importance of each participant's response. Once a participant completed the survey instrument, they were removed from the reminder email list and all alumni who participated in the study were thanked for their participation (Dillman et al., 2014).

The first email sent out to the 2017-2019 program alumni included the pre-survey invitation, introduced participants to the study, provided procedures for completing the questionnaire, explained their confidentiality, provided them contact information for IRB and the researcher, and also included a link to access the questionnaire (see Appendix B). The Qualtrics software provided each participant with a personalized email link which tracked the response rate of each participant, allowing reminder emails to be sent to non-respondents accordingly. Following the initial email sent out to the 2017-2019 cohort, the first email reminder was distributed on November 21, 2019, to 28 individuals who had not completed the survey from the original request. The researcher sent out several additional email reminders throughout the duration of the study on November 27, 2019 ($n = 21$), December 10, 2019 ($n = 15$), January 3, 2020 ($n = 8$), and January 14, 2020 ($n = 6$). All of the reminder emails followed the guidelines presented by Dillman et al. (2014).

Twenty-seven individuals responded to the questionnaire out of the 30 participants of the 2017-2019 NCTTFC ALDP cohort, resulting in a 90% response rate. One response was deleted due to the respondent agreeing to participate in the study, but not providing any responses to the statements/questions presented throughout the instrument. Two individuals did not complete the questionnaire despite several attempts to contact these individuals. All participant information remained confidential throughout the study, with all of the data and information stored on restricted-access computers and software at NC State.

Data Analysis

There were four research questions that guided this study. All quantitative data were analyzed using SPSS and all open-ended responses were compiled in an Excel file for further analysis. The data analysis methods utilized for each research question will be explained below.

Research Question 1

Research Question 1 asked, “*What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?*” For the personal level, the variables measured included community involvement, self-confidence, creative thinking, business skills, awareness of the value of time, the value of family, exposure to new ideas and concepts, critical thinking skills, appreciation of cultural differences, and the desire to seek out a mentor. At the business/professional level, the variables included business/organizational decision-making skills, networking, ability to respond to problems or situations more effectively, approach to problem-solving, use of time, involvement in professional organizations, and use of resources. For the societal/community level, the variables included involvement with groups/issues on a local, state, national, and international level, awareness of the diversity of North Carolina agriculture, budgeting within communities, the importance of saying “no” to be more effective in leadership positions, and understanding of an individual’s values and its impact on community development. These statements utilized a five-point Likert-type scale (0 = *very low*, 1 = *low*, 2 = *moderate*, 3 = *high*, 4 = *very high*) for both the pre-test and post-test for all three levels examined in the study.

For each of these sections of the instrument, percentages, means, and standard deviations were calculated for the pre-test and post-test for all statements on the personal, business/professional, and societal/community levels. The data for each are reported in Chapter

4, with separate tables (see Tables 1-3) for each level of outcomes examined throughout the study. Also, to test for overall growth on the personal, business/professional, and societal/community levels the statements tested as a construct were combined into one variable for the pre-test and post-test. Then, a paired sample *t*-test was conducted to compare the means for each level of the instrument prior to the participants completing the NCTTFC ALDP and after graduating from the program. The data are reported in Table 4 for the paired sample *t*-tests.

Research Question 2

Research Question 2 asked, “*Where did program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?*” After the pre-test and post-test conducted at the personal level, several statements were included in the instrument which asked participants about the changes they had experienced on a personal level as a result of their involvement in the agricultural leadership development program. These statements utilized five-point Likert-type scales (0 = *strongly disagree*, 1 = *disagree*, 2 = *neutral*, 3 = *agree*, 4 = *strongly agree*) to allow participants to rate their level of agreement with the statements presented. Descriptive statistics, including means and standard deviations, are reported in Table 5 for each of the four statements. Participants for this section of the instrument were provided open-ended questions to allow them to expand on how they improved on a personal level and if they had decided to pursue further education. The data collected from these open-ended questions were compiled in an Excel file, allowing for further analysis of how the program alumni had improved on a personal/individual level.

Research Question 3

Research Question 3 asked, “*Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership*

development program?” After the pre-test and post-test conducted at the business/professional level, several statements were included in the instrument which asked participants about the changes they had experienced on a business/professional level as a result of their involvement in the agricultural leadership development program. These statements utilized five-point Likert-type scales (0 = *strongly disagree*, 1 = *disagree*, 2 = *neutral*, 3 = *agree*, 4 = *strongly agree*) to allow participants to rate their level of agreement with the statements presented. Descriptive statistics, including means and standard deviations, are reported in Table 6 for these three statements. Participants for this section of the instrument were provided open-ended responses to allow them to expand on how they improved on a business/professional level and if they had changed careers due to their experience in the NCTTFC ALDP. The information collected from these open-ended questions were compiled in an Excel file and analyzed for further in-depth analysis of how the program alumni had improved on a business/professional level.

Research Question 4

Research Question 4 asked, “*Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program?*” To address this research question, participants were provided open-ended questions where they could expand on their improvements for the societal/community level, including any projects that they had initiated or championed because of their experience in the NCTTFC ALDP. In addition, participants were asked to provide up to five organizations that they had been involved with prior to beginning the leadership program and their organizational involvement after graduating from the NCTTFC ALDP. Respondents were asked to report their level of involvement (local, state, or national level) and whether they were a member or committee member/officer within each specific organization. The information collected from the

organizational involvement chart was compiled into an Excel file and hand-coded so the researcher could determine the specific organizations program alumni had been or were currently involved in at the time of the study. The information collected from this chart allowed the researcher to understand if each individual increased or decreased their involvement in regard to their community engagement after completing the NCTTFC ALDP and is reported in Tables 7-9.

Chapter Summary

Chapter 3 detailed the methodology and research design used to complete this research study. The instrument utilized for this research consisted of categorical, Likert-type, closed, and open-ended questions that were organized into the personal, business/professional, and societal/community levels. Results of the pilot test and the reliability of the instrument, in addition to specific data collection and analysis methods, were also explained. Out of the 30 participants in the 2017-2019 cohort, 27 responded to the questionnaire distributed through Qualtrics, resulting in a 90% response rate. Quantitative data were analyzed using SPSS and were reported utilizing descriptive statistics and paired sample *t*-tests to determine the growth in leadership skills on a personal, business/professional, and societal/community level. All open-ended questions were compiled into an Excel file and hand-coded by the researcher to assist in further analysis and triangulation of the data.

CHAPTER 4

RESULTS

The purpose of this study was to describe the leadership skill development as a result of participation in the NCTTFC ALDP on a personal, business/professional, and societal/community level of the 2017-2019 program alumni. The information obtained from this study will be useful to program leaders, facilitators, and stakeholders to determine the outcomes of program participation and make needed improvements to the NCTTFC ALDP ensuring that participants are benefitting from the program.

The following research questions guided this study:

1. What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?
2. Where did the program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?
3. Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program?
4. Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program?

The researcher, along with a panel of experts in agricultural leadership development, extension education, and program evaluation developed the instrument for this study. Of the 30 individuals that were contacted to participate, 27 responded, resulting in a response rate of 90%. Due to the small population, the data collected from this study cannot be generalized beyond the

study population. This chapter provides the results of the study as they relate to each of the research questions, describing the general findings, trends, and significance.

Findings

Findings Related to Research Question 1: Growth in Leadership Skills

Personal Level

Research Question 1 aimed to identify the growth in leadership skills experienced by program alumni after completing the NCTTFC ALDP. Respondents were asked to respond to statements in a retrospective pre-test post-test format placed on a five-point Likert-type scale of *very low* to *very high* ranking their competence before and after they participated in the NCTTFC ALDP on a personal, business/professional, and societal/community level. Table 1 shows the means, percentages, and standard deviations for the 10 personal level statements related to the participants' level of competence before and after completing the NCTTFC ALDP.

For each statement included in Table 1, respondents reported that they improved from the pre-test to the post-test. From the responses recorded on the post-test, respondents rated their level of competence for each statement greater than their responses for the pre-test indicating that they were able to improve their personal level competencies during the program as summarized in Table 1. The top three statements that demonstrated the largest mean increase from the pre-test to the post-test included: desire to seek out a mentor (pre-test $M = 1.59$, $SD = .97$; post-test $M = 2.83$, $SD = .64$); awareness of the value of my time (pre-test $M = 1.96$, $SD = .85$; post-test $M = 3.08$, $SD = .50$); and exposure to new ideas and concepts (pre-test $M = 2.19$, $SD = .83$; post-test $M = 3.25$, $SD = .44$). In terms of the statements where respondents had not improved as much included: self-confidence (pre-test $M = 2.15$, $SD = .66$; post-test $M = 2.83$, $SD = .57$); community involvement (pre-test $M = 2.00$, $SD = .83$; post-test $M = 2.67$, $SD = .92$); and value of my family

(pre-test $M = 3.19$, $SD = .68$; post-test $M = 3.71$, $SD = .46$). The percentages, means, and standard deviations for the pre-test and the post-test for each of the statements are presented in

Table 1.

Table 1*Personal Level of Competence Before and After Participation in the NCTTFC ALDP ($n^{pretest} = 27, n^{posttest} = 24$)*

Statement	Very Low		Low		Moderate		High		Very High		Mean		Difference Between Means	Std. Dev.	
	Pre %	Post %	Pre %	Post %	Pre %	Post %	Pre %	Post %	Pre %	Post %	Pre	Post		Pre	Post
Desire to seek out a mentor	7.4	-	48.1	4.2	25.9	16.7	14.8	70.8	3.7	8.3	1.59	2.83	1.24	0.97	0.64
Awareness of the value of my time	3.7	-	22.2	-	51.9	8.3	18.5	75.0	3.7	16.7	1.96	3.08	1.12	0.85	0.50
Exposure to new ideas and concepts	-	-	22.2	-	40.7	-	33.3	75.0	3.7	25.0	2.19	3.25	1.06	0.83	0.44
Appreciation of cultural differences	-	-	11.1	-	59.3	16.7	22.2	58.3	7.4	25.0	2.26	3.08	0.82	0.76	0.65
Business skills	3.7	-	14.8	4.2	51.9	20.8	29.6	62.5	-	12.5	2.07	2.83	0.76	0.78	0.70
Creative thinking skills	3.7	-	7.4	-	59.3	20.8	22.2	62.5	7.4	16.7	2.22	2.96	0.74	0.85	0.62
Critical thinking skills	-	-	11.1	-	37.0	4.2	33.3	62.5	18.5	33.3	2.59	3.29	0.70	0.93	0.55
Self-confidence	-	-	11.1	-	66.7	25.0	18.5	66.7	3.7	8.3	2.15	2.83	0.68	0.66	0.57
Community involvement	3.7	4.2	22.2	4.2	44.4	25.0	29.6	54.2	-	12.5	2.00	2.67	0.67	0.83	0.92
Value of my family	-	-	-	-	14.8	-	51.9	29.2	33.3	70.8	3.19	3.71	0.52	0.68	0.46

Note. Scale: 0 = Very Low; 1 = Low; 2 = Moderate; 3 = High; 4 = Very High

Business/Professional Level

For the business/professional level, participants were asked to respond indicating their level of business/organizational proficiency before and after completing the NCTTFC ALDP. On the business/professional level, the respondents reported that they improved their leadership development for all seven statements. The three statements that had the highest mean increase on the business/professional level included: networking skills (pre-test $M = 2.00$, $SD = .73$; post-test $M = 3.27$, $SD = .53$); involvement in professional organizations (pre-test $M = 1.70$, $SD = .67$; post-test $M = 2.88$, $SD = .77$); and use of resources (pre-test $M = 2.04$, $SD = .76$; post-test $M = 3.12$, $SD = .52$). The least mean improvement was recorded on: approach to problem solving (pre-test $M = 2.26$, $SD = .71$; post-test $M = 3.15$, $SD = .37$). The other three items in the middle of improvement included: business/organizational decision making skills (pre-test $M = 2.00$, $SD = .56$; post-test $M = 3.04$, $SD = .34$); use of time (pre-test $M = 2.07$, $SD = .87$; post-test $M = 3.08$, $SD = .56$); and ability to respond to problems or situations more effectively (pre-test $M = 2.04$, $SD = .65$; post-test $M = 3.00$, $SD = .49$). A complete chart representing the aggregated percentages, means, and standard deviations for each statement on the business/professional level can be seen in Table 2.

Table 2*Business/Professional Level of Proficiency Before and After Participation in the NCTTFC ALDP ($n^{pretest} = 27$, $n^{posttest} = 26$)*

Statement	Very Low		Low		Moderate		High		Very High		Mean		Difference Between Means	Std. Dev.	
	<i>Pre</i> %	<i>Post</i> %	<i>Pre</i> %	<i>Post</i> %	<i>Pre</i> %	<i>Post</i> %	<i>Pre</i> %	<i>Post</i> %	<i>Pre</i> %	<i>Post</i> %	<i>Pre</i>	<i>Post</i>		<i>Pre</i>	<i>Post</i>
Networking skills	3.7	-	14.8	-	59.3	3.8	22.2	65.4	-	30.8	2.00	3.27	1.27	0.73	0.53
Involvement in professional organizations	3.7	-	29.6	3.8	59.3	23.1	7.4	53.8	-	19.2	1.70	2.88	1.18	0.67	0.77
Use of resources	-	-	25.9	-	44.4	7.7	29.6	73.1	-	19.2	2.04	3.12	1.08	0.76	0.52
Business/organizational decision making skills	-	-	14.8	-	70.4	3.8	14.8	88.5	-	7.7	2.00	3.04	1.04	0.56	0.34
Use of time	-	-	25.9	-	48.1	11.5	18.5	69.2	7.4	19.2	2.07	3.08	1.01	0.87	0.56
Ability to respond to problems or situations more effectively	-	-	14.8	-	70.4	11.5	11.1	76.9	3.7	11.5	2.04	3.00	0.96	0.65	0.49
Approach to problem solving	-	-	11.1	-	55.6	-	29.6	84.6	3.7	15.4	2.26	3.15	0.89	0.71	0.37

Note. Scale: 0 = Very Low; 1 = Low; 2 = Moderate; 3 = High; 4 = Very High

Societal/Community Level

For the societal/community level, participants were asked to indicate their community involvement before and after completing the NCTTFC ALDP. Respondents reported that they had improved on a societal/community level for each of the eight statements that comprised this section of the instrument. The three statements that demonstrated the highest mean increase included: understanding that I sometimes need to say “no” to be more effective in leadership positions (pre-test $M = 1.41$, $SD = .75$; post-test $M = 3.22$, $SD = .58$); awareness of the diversity of agriculture throughout North Carolina (pre-test $M = 2.11$, $SD = .85$; post-test $M = 3.67$, $SD = .48$); and understanding of an individual’s values and its impact on community development (pre-test $M = 1.96$, $SD = .59$; post-test $M = 3.26$, $SD = .53$). The statements that indicated a slight improvement from pre-test to post-test included: involvement with groups/issues on a state level (pre-test $M = 1.07$, $SD = .78$; post-test $M = 2.07$, $SD = 1.00$); involvement with groups/issues on a national level (pre-test $M = .63$, $SD = .79$; post-test $M = 1.63$, $SD = .97$); involvement with activities/issues in other countries (pre-test $M = .37$, $SD = .74$; post-test $M = 1.26$, $SD = 1.16$); and involvement with groups/issues on a local level (pre-test $M = 1.67$, $SD = .62$; post-test $M = 2.44$, $SD = .97$). Additional information regarding societal/community level improvement, including a summary of the data (means, percentages, and standard deviations) for the eight societal/community level statements can be found in Table 3.

Table 3*Societal/Community Level of Competence Before and After Participation in the NCTTFC ALDP (n = 27)*

Statement	Very Low		Low		Moderate		High		Very High		Mean		Difference Between Means	Std. Dev.	
	Pre %	Post %	Pre %	Post %	Pre %	Post %	Pre %	Post %	Pre %	Post %	Pre	Post		Pre	Post
Understanding that I sometimes need to say “no” to be more effective in leadership positions	11.1	-	40.7	-	44.4	7.4	3.7	63.0	-	29.6	1.41	3.22	1.81	0.75	0.58
Awareness of the diversity of agriculture throughout North Carolina	3.7	-	18.5	-	40.7	-	37.0	33.3	-	66.7	2.11	3.67	1.56	0.85	0.48
Understanding of an individual’s values and its impact on community development	-	-	18.5	-	66.7	3.7	14.8	66.7	-	29.6	1.96	3.26	1.30	0.59	0.53
Awareness of the importance of budgets within communities	3.7	-	18.5	-	55.6	14.8	22.2	55.6	-	29.6	1.96	3.15	1.19	0.76	0.66
Involvement with groups/issues on a state level	22.2	7.4	51.9	14.8	22.2	48.1	3.7	22.2	-	7.4	1.07	2.07	1.00	0.78	1.00
Involvement with groups/issues on a national level	51.9	7.4	37.0	40.7	7.4	40.7	3.7	3.7	-	7.4	.63	1.63	1.00	0.79	0.97
Involvement with activities/issues in other countries	74.1	33.3	18.5	25.9	3.7	25.9	3.7	11.1	-	3.7	.37	1.26	0.89	0.74	1.16
Involvement with groups/issues on a local level	3.7	3.7	29.6	14.8	63.0	22.2	3.7	51.9	-	7.4	1.67	2.44	0.77	0.62	0.97

Note. Scale: 0 = Very Low; 1 = Low; 2 = Moderate; 3 = High; 4 = Very High

Change in Overall Leadership Development

The overall competency scores for the personal level, business/professional level, and the societal/community level scales were computed by aggregating the individual item scores for each scale and dividing the aggregated value by the number of items in each scale. After computing the aggregated pre-test and post-test mean score for each of the three scales, paired sample *t*-tests were conducted to determine whether the post-test score was significantly different from the pre-test score for each level. As summarized in Table 4, the overall mean score for the personal level, business/professional level, and societal/community level competencies significantly improved from the pre-test to the post-test. The greatest change in mean reported by program participants occurred on the societal/community level with the overall mean score increasing by 1.19. The change in overall scores for all participants on the societal/ community level ranged from .38 to 2.50, indicating that all respondents improved their leadership development skills on the societal/community level. The business/professional level experienced an overall mean increase by 1.06, with overall scores ranging from .00 to 2.29 for the 26 individuals who responded to this section of the instrument. One participant reported that they did not experience any increase in leadership development skills on the business/professional level, however, 96.2% of the individuals that completed this section of the questionnaire experienced an increase in leadership development at this level. At the personal level, one individual reported that their personal leadership development skills decreased by .50, however, 95.8% of respondents reported that they increased their personal leadership development having completed the program. The change in overall score on the personal level for the 23 participants that reported increased personal leadership development ranged from .30 to 2.10. The personal level of the instrument resulted in the lowest mean increase, improving by 0.9. At each level of

the instrument, all mean increases were statistically significant with a p-value less than .05. The amount of growth reported by participants in the 2017-2019 cohort of the NCTTFC ALDP for each section of the instrument can be found in Table 4 along with the respective t-values and significance levels.

Table 4

Paired Sample t-tests Comparing Overall Leadership Development Growth for the Personal, Business/Professional, and Societal/Community Levels

Variable	n	Mean		t	Sig. (2-tailed)
		Before	After		
Societal/Community Level Growth	27	1.40	2.59	10.865	.000*
Business/Professional Level Growth	26	2.02	3.08	9.019	.000*
Personal Level Growth	24	2.15	3.05	8.561	.000*

Note. *Significant at $p < .05$

Findings Related to Research Question 2: Personal Level Impacts

Research Question 2 focused on where program participants used their leadership skills to impact their personal lives after the completion of the agricultural leadership development program. Four statements were included in the instrument asking respondents to rate their level of agreement regarding their personal improvement after completing the NCTTFC ALDP. These findings are summarized in Table 5. The program participants strongly agreed that the NCTTFC ALDP helped them to realize that they have the power to make a difference within the agricultural industry ($M = 3.56$). For the remaining three statements, the participants agreed that their NCTTFC ALDP experience began a series of life changing events for them ($M = 3.41$), that they were able to meet people whose success they could imitate through their NCTTFC ALDP

experience ($M = 3.38$), and that others describe them as being changed by their NCTTFC ALDP experience ($M = 2.85$).

Table 5*Agreement With Statements Regarding Personal Improvement After Completing the NCTTFC ALDP (n = 27)*

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
The NCTTFC ALDP helped me to realize that I have the power to make a difference within the ag industry	-	-	7.4	29.6	63.0	3.56	0.64
My NCTTFC ALDP experience began a series of life changing events for me	-	-	3.7	51.9	44.4	3.41	0.57
Due to my NCTTFC ALDP experience, I was able to meet people whose success I could imitate	-	3.8	-	50.0	46.2	3.38	0.70
People describe me as being changed by my NCTTFC ALDP experience	-	-	29.6	55.6	14.8	2.85	0.66

Note. Real Limits: 0-0.49 = Strongly Disagree; 0.50-1.49 = Disagree; 1.50-2.49 = Neutral; 2.50-3.49 = Agree; 3.50-4.0 = Strongly Agree

In addition to the statements presented in Table 5, respondents were provided two questions asking if they had improved on a personal level because of their experience in the NCTTFC ALDP with the option of providing an open-ended response. The respondents reported that they had benefited from the Crucial Conversations training ($n = 8$), became more open-minded in understanding others' point of view ($n = 7$), improved their relationships with others ($n = 5$), improved their communication skills ($n = 3$), and had a greater understanding of the value of their time ($n = 3$). Other participants reported that they had increased or improved their self-confidence, public speaking skills, involvement in the agriculture industry, and management skills. Several others reported the benefits of the study tours, achieving goals on their personal development plan, and becoming better at asking for help or mentorship.

The last question of the personal level section of the instrument asked participants if they had decided to pursue further formal education because of their experience in the leadership development program. Two participants reported that they had or were planning to complete the Executive Farm Management Program and one reported that they had received a Nuffield Scholarship.

To further understand participant growth on the individual level, an open-ended question asked participants to further describe their improvement. One individual (P11) described their personal improvement as:

I have learned many things about myself over the course of the program. There are personal characteristics which I may not have recognized without participation in the program. I use strategies that I have learned on a daily basis. For example, I have not always been a great communicator especially when it comes to stressful and/or confrontational situations. I have learned strategies that now help me deal with these

situations. I have used "crucial conversations" both personally and professionally that have greatly helped stressful situations. My personal development plan has helped me focus on goals and accomplish many things since the conclusion of the program. I worked with [Coaches Name] on my 5-10 year personal development plan. I have already achieved 3 of my 7 goals and I am actively working on 2 more. The program also introduced me to many situations and people that have challenged my thought process. I have learned to look at things with an open mind. I am very structured and do find it hard to move beyond my preconceived notions. This program gave me the tools to process my ideas and listen to others before coming to conclusions.

Another participant (P19) described their personal improvement as:

I think one of the biggest things for me was seeing things from a different perspective. The Crucial Conversations piece was great in first helping with that philosophy but each new session or study tour helped reinforce that concept. Some of that came from talking to other participants and listening to their point of view and some of that came from listening to speakers that the leadership team lined up for us to hear. Texas was an eye opening experience and another example of taking a step back, listening to the other side of an issue, educating ourselves on the issue(s), and then forming an opinion on the subject. Some of the assessments that we took about ourselves and how we relate to others was also helpful in developing this skill. I realized that sometimes I'm not as empathetic as I could be and sometimes I'm too dominant when I'm stressed. I've been working on both items at work and it has helped me work through some challenging situations.

Findings Related to Research Question 3: Business/Professional Level Impacts

Research Question 3 focused on where program participants used their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program. Three statements were included in the instrument asking respondents to rate their level of agreement regarding their business/professional improvement after completing the NCTTFC ALDP. As indicated in Table 6, respondents strongly agreed that the NCTTFC ALDP helped them to build a better network of contacts ($M = 3.74$). Participants also agreed that their exposure to other people and ideas helped facilitate change in their farm/business ($M = 3.30$) and that their NCTTFC ALDP experience helped them to change the direction of their business/career ($M = 2.67$).

Table 6*Agreement With Statements Regarding Business/Professional Improvement After Completing the NCTTFC ALDP (n = 27)*

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
The NCTTFC ALDP helped me to build a better network of contacts	-	-	-	25.9	74.1	3.74	0.45
The exposure to other people and ideas helped facilitate change in my farm/business	-	-	14.8	40.7	44.4	3.30	0.72
My NCTTFC ALDP experience helped me to change the direction of my business/career	-	11.1	25.9	48.1	14.8	2.67	0.88

Note. Real Limits: 0-0.49 = Strongly Disagree; 0.50-1.49 = Disagree; 1.50-2.49 = Neutral; 2.50-3.49 = Agree; 3.50-4.0 = Strongly Agree

In addition to the statements presented in Table 6, respondents were provided two questions asking about their improvement on a business/professional level because of their participation in the NCTTFC ALDP with the option of providing an open-ended response. The respondents reported that they had benefited by expanding their network of contacts and being able to approach others ($n = 7$), gaining a new position within their current company with more responsibility/territory ($n = 4$), better communication and facilitation skills in group settings ($n = 4$), and identifying and responding to changes in the industry with new and creative ways ($n = 3$). Several others responded that they had become more open-minded and willing to see things through a different lens, completed additional leadership development trainings, became more involved in agricultural organizations, and were more willing to take on additional projects to advance themselves in their career.

Participants were also asked if they had changed careers as a result of their participation in the NCTTFC ALDP. One participant was able to return back to their family farm 100% and another was able to transition from a nursery manager to a nursery owner. Lastly, one participant had the opportunity to transition from managing an agricultural chemical distribution/retail location to working in the supplier side of the agricultural chemical business. This participant stated that due to his/her participation in the leadership program, he/she was open to a career change that was more fitting for him/herself and his/her family. One individual (P12) stated that the leadership program improved his/her business/professional skills by emphasizing:

Many tools were shared for me to use in running my business. We have also been able to look at new and creative ways to respond to the constant changing ag industry. Most importantly, I have gained a wide new network of leading ag contacts both in my Leadership class, but also in the alumni group.

Another participant (P19) stated:

Professional and personal relationships have improved my network tremendously.

Having so many new contacts in the ag industry is crucial to success in today's world. I know that if I need something or have a question, I now have 29+ resources that would be glad to help, even the ones that I'm not as close to. I also have connections through many others due to the exposure to so many people throughout our journey. I also feel like I could still call my coach with any professional or personal topic and they would be willing to help in any way.

Findings Related to Research Question 4: Societal/Community Engagement

Research Question 4 focused on where program participants used their leadership skills to impact their community engagement after completion of the agricultural leadership development program. Respondents were asked questions regarding their improvement on a societal/community level due to their experience in the NCTTFC ALDP. Many program alumni reported that they had become more involved in local organizations. Others who responded to this open-ended question stated that they had become more aware of societal issues, understood the importance of government budgets and their impact on rural development, were more outspoken when communicating with elected officials, and increased their willingness to participate in meetings. Additional responses regarding societal/community involvement included understanding the relationship between community organizations and farmers, being more open-minded towards other people's ideas, increased involvement on the state and national level, gained a greater understanding of the importance of local communities to the economy, learned the importance of saying no to be more effective in other leadership roles or aspects of family/personal life, and encouraged leadership development in others. From the open-ended

question regarding improvement on a societal/community level, one participant (P19) reported that:

I was always involved at the local level but I'm trying to increase my involvement at the state level. I also realized the need to be involved at the national level. As much as we hear about Washington, I realized that we need to be seen and heard in Washington as well as Raleigh. I realized how important it is to make sure that our lawmakers hear from rural America. Another piece that helped me, is learning that we all basically have the same goals but VERY different ways to obtain those goals. Sometimes you have to accept something you don't love, in order to fight for the things that are most important.

Another respondent (P26) provided the following response:

I tended to be overloaded in "extra" roles such as church. The program made me realize that spreading too thin can be ineffective as leader. I actually stepped down as deacon chair for my daughter's senior year in high school to make sure I didn't miss important moments that I had in the past. I have learned to pick roles that will fit my schedule instead of someone talking me into something that I know will likely not work long term.

Respondents were also asked to describe any community projects that they had initiated or championed because of their experience in the program and any elected government positions they held. Several participants reported that they had been able to host meetings at their farm, organize a fundraiser for a commodity association, accepted a leadership role within their church, and started a new church program. None of the respondents in the 2017-2019 NCTTFC ALDP cohort reported having any elected government position at the time the questionnaire was distributed. Also, participants were asked to rank their level of change, on a scale of 0 to 10 that they had experienced due to their participation in the NCTTFC ALDP. Twenty-six responses

were recorded for this statement, with individual scores ranging from 4-10, resulting in an average score of 7.83.

Organizational Involvement

A total of 22 participants responded to the organizational engagement recording metrics (see the instrument in Appendix C) describing their community involvement at the local, state, and national level before and after completing the NCTTFC ALDP. An average of three organizations were reported by each participant for a total of 69 individual organizations. Organizations that participants were involved in varied across agricultural and commodity associations, advisory councils, Farm Bureau, religious, and youth organizations. Several agricultural and commodity associations that were represented included NC Grape and Wine Council, NC Seedsmen's Association, North American Raspberry and Blackberry Association, NC Vegetable Growers Association, NC Pork Council, and NC Small Grain Growers Association. Participants also listed that they were involved with advisory councils and advisory boards on the local level including county soil and water advisory boards, resource conservation and development councils, farmers market advisory boards, and college advisory boards. In addition, program alumni reported that they were involved in various religious associations, schools, boy scouts, TREC USA, and their local fire department. Table 7 displays the number of organizations indicated by participants in which they were involved as a member or committee member/officer at the local, state, and national levels before and after the program. Additional information from the organizational involvement metrics, including specific organizations, are included in Table 8 and Table 9, respectively for member and committee member/officer involvement.

Table 7*Participants' Organizational Involvement Before and After the NCTTFC ALDP (n = 22)*

Position	Before			After		
	<i>Local</i>	<i>State</i>	<i>National</i>	<i>Local</i>	<i>State</i>	<i>National</i>
Member	41	15	6	41	20	8
Committee Member/Officer	26	6	3	22	9	2

Note. Quantities denote frequencies of how often organizations were represented at each level.

In regard to community involvement, program alumni reported that their membership varied from before and after their participation in the NCTTFC ALDP. At the local level, participants reported that their membership involvement in their county Farm Bureaus and county extension advisory boards increased the most. One participant reported that they decreased their local involvement on three separate county/regional advisory councils. For state-level membership involvement, two participants reported that they had become involved with the NC Soybean Producers Association, however, another participant stated that they were no longer involved in their religious organization's disaster relief program. On the national level, one individual reported that they increased their involvement with the North American Agricultural Marketing Officials organization and another stated that they became a member of the National Cattlemen's Beef Association. No respondent noted that their membership involvement on the national level had decreased.

On the committee member/officer level, participant involvement fluctuated among the various organizations that were reported. In regard to local committee member/officer involvement, participants reported that they decreased their involvement the most on two local college advisory boards and two county advisory councils. However, one respondent did indicate that they became a committee member/officer with their local chamber of commerce and another

respondent reported that they became a committee member/officer with their county extension advisory council. At the state level, individual participants became officers with the NC Small Grain Growers Association, NC Farm Bureau, NC State Alumni Association, and the NC Cattlemen's Association. There were no reports of individuals decreasing their committee member/officer level positions on the state level. On the national level, one individual became an officer with the TREC USA organization, however, one individual reported that they were no longer an officer with The Research Center Administrators Society and another reported that they no longer held an officer position with the SS Marketing Council.

Table 8 and Table 9 display the member and committee member/officer level involvement for the organizations in which alumni had been or were currently involved at the time of the study. These tables report how many respondents were involved at each level (local, state, national) and the overall increase or decrease in organizational involvement experienced by program alumni from before and after the 2017-2019 NCTTFC ALDP.

Table 8*Organizational Involvement at the Member Level Before and After the NCTTFC ALDP (n = 22)*

	<i>n</i>	# of participants pre NCTTFC ALDP			# of participants post NCTTFC ALDP			Improve (+1)/ Same(-)/ Decrease (-1)		
		<i>Local</i>	<i>State</i>	<i>National</i>	<i>Local</i>	<i>State</i>	<i>National</i>	<i>Local</i>	<i>State</i>	<i>National</i>
Agricultural & Commodity Associations – Other	9	3	6	4	3	7	5	-	+1	+1
Farm Bureau	8	5	4	1	7	4	1	+2	-	-
Religious Organizations	8	9	1	0	8	-	-	-1	-1	-
Advisory Councils – Other	4	7	-	-	4	-	-	-3	-	-
Extension Advisory Board	4	2	-	-	4	-	-	+2	-	-
Other Various Organizations	4	3	-	1	2	1	1	-1	+1	-
Cattlemen’s Associations	3	3	2	-	3	2	1	-	-	+1
NC State Agricultural Foundations	3	-	2	-	-	3	-	-	+1	-
Youth Organizations	3	4	-	-	4	-	-	-	-	-
NC Soybean Producers Association	2	-	-	-	-	2	-	-	+2	-
4-H	2	2	-	-	2	-	-	-	-	-
Chamber of Commerce	2	1	-	-	2	1	-	+1	+1	-
College Advisory Boards	1	2	-	-	2	-	-	-	-	-

Note. Organizations represented separately in the table were reported more than once in the data set. Any organization reported only once in the data set was grouped with its respective type of organization.

Table 9*Organizational Involvement at the Committee Member/Officer Level Before and After the NCTTFC ALDP (n = 22)*

	<i>n</i>	# of participants pre NCTTFC ALDP			# of participants post NCTTFC ALDP			Improve (+1)/ Same(-)/ Decrease (-1)		
		<i>Local</i>	<i>State</i>	<i>National</i>	<i>Local</i>	<i>State</i>	<i>National</i>	<i>Local</i>	<i>State</i>	<i>National</i>
Agricultural & Commodity Associations – Other	9	3	2	3	2	3	1	-1	+1	-2
Farm Bureau	8	3	1	-	3	2	-	-	+1	-
Religious Organizations	8	5	1	-	5	-	-	-	-	-
Advisory Councils – Other	4	4	-	-	2	-	-	-2	-	-
Extension Advisory Board	4	2	-	-	3	-	-	+1	-	-
Other Various Organizations	4	1	-	-	-	1	1	-1	+1	+1
Cattlemen’s Associations	3	2	1	-	2	2	-	-	+1	-
NC State Agricultural Foundations	3	-	1	-	-	1	-	-	-	-
Youth Organizations	3	3	-	-	3	-	-	-	-	-
NC Soybean Producers Association	2	-	-	-	-	-	-	-	-	-
4-H	2	1	-	-	1	-	-	-	-	-
Chamber of Commerce	2	-	-	-	1	-	-	+1	-	-
College Advisory Boards	1	2	-	-	-	-	-	-2	-	-

Note. Organizations represented separately in the table were reported more than once in the data set. Any organization reported only once in the data set was grouped with its respective type of organization.

Chapter Summary

The four research questions that guided this study allowed the researcher to examine how program participants perceived their growth in leadership skills over the duration of the NCTTFC ALDP. The data collected demonstrated that participants improved their leadership skills on the personal, business/professional, and societal/community levels. Participants also reported that they agreed or strongly agreed to statements regarding their leadership development on a personal and business/professional level after completing the program. In addition, participants reported that they were involved in many organizations on the local, state, and national levels. From the 22 participants who responded to the organizational involvement metrics, 69 total organizations were reported in which the 2017-2019 program alumni were involved. These various organizations included agricultural and commodity associations, Farm Bureau, religious organizations, advisory councils and boards, youth organizations, chamber of commerce, and 4-H. The member and committee member/officer involvement throughout these organizations varied among local, state, and national levels.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this chapter is to provide an overview of the research study conducted, summarize findings, and make conclusions. Implications and recommendations for future research and practice are also provided.

Summary of Study

The agricultural industry throughout the United States contributes billions of dollars to the nation's economy each year. However, America's farmers and ranchers are faced with an increasing number of challenges due to land fragmentation, population growth, urbanization, and development (USCEA, 2013). In order to face the many challenges that continue to impact the agriculture industry on a daily basis, agriculturalists need to be equipped with the tools to lead, communicate, and survive in an ever-changing field. Within the United States, there are at least 40 states that have agricultural leadership development programs designed to develop community leaders (Kaufman & Carter, 2005) while also providing training for individuals to assume leadership roles at the local, state, and national level. The NCTTFC ALDP is a two year leadership development program for farmers and agricultural professionals throughout North Carolina. Over the duration of the program, participants receive training on developing personal and civic leadership skills through seminars, study tours, and interactions with government agencies, commodity associations, and other agriculturally related businesses (Brown, 2016a).

Purpose of the Study and Research Questions

The purpose of this study was to describe the effectiveness of the NCTTFC ALDP in developing leadership skills in graduates of the 2017-2019 program cohort. To achieve this, the study employed an instrument to measure the outcomes of leadership development on the

personal, business/professional, and societal/community levels utilizing the EvaluLEAD framework proposed by Grove et al. (2005). This study serves to provide information to program leaders and facilitators on how to improve the planning and implementation of the NCTTFC ALDP to enhance participant's leadership skills and prepare them to assume leadership roles in their personal lives, within their organizations, and in their communities.

The following research questions guided this study:

1. What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?
2. Where did the program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?
3. Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program?
4. Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program?

Significance of the Study

To assist in meeting the growing needs and challenges of the agricultural industry, leadership development programs focused on agriculture are essential. Since the creation of the NCTTFC ALDP, there has been no prior evaluation conducted to determine the growth, if any, in leadership skills of participants. Meehan and Reinelt (2007) suggest that leadership development programs recognized as developing leaders at the individual, organizational, and community levels are more likely to be successful for future program cohorts. To sustain the

NCTTFC ALDP, the outcomes produced by the program on alumni and their communities need to be examined to ensure the program is reaching its intended goals and so that the necessary improvements can be made. Therefore, it is important for those who support, sponsor, and assist with the program understand its impacts on participants and North Carolina residents.

Study Design and Instrumentation

The methodology selected for the study was a retrospective pre-test post-test survey design. A census was utilized for this study, including all 30 participants of the 2017-2019 NCTTFC ALDP cohort. The instrument utilized in this study was developed based on the work of Black (2006) and consisted of three main sections corresponding to outcomes on the individual, business/professional, and societal/community levels. The instrument was developed by the researcher and a panel of experts in agricultural leadership development, extension education, and program evaluation to ensure content and face validity. The instrument, distributed through Qualtrics, consisted of 42 questions/statements and included categorical, Likert-type, closed, and open-ended questions that were divided among the three main sections. A pilot test was conducted to ensure the questionnaire developed for this research study was reliable prior to data collection. All statements measuring leadership development growth for the personal, business/professional, and societal/community levels yielded Cronbach's alphas of .80 or higher. According to George and Mallory (2011), a Cronbach's alpha of .70 and higher is considered acceptable. The questionnaire developed for this study was deemed reliable and was implemented for the final research study.

Data Collection and Analysis

Qualtrics was used to create and distribute the questionnaire to participants of the 2017-2019 NCTTFC ALDP cohort. The Qualtrics software provided each participant with a

personalized email link, allowing reminder emails to be sent to non-respondents accordingly. All communication and reminder emails throughout the data collection process followed the guidelines presented by Dillman et al. (2014). A total of 27 completed responses were received, resulting in a 90% response rate for this study. After data collection, the researcher analyzed all quantitative data in SPSS, calculating the percentages, means, and standard deviations for all quantitative components and sections of the instrument. In addition, paired sample *t*-tests were performed for the pre-tests and post-tests on the personal, business/professional, and societal/community levels to assess if there was a significant difference in means for the three levels examined throughout this study. All open-ended responses recorded from the instrument were entered into an Excel file and analyzed by the researcher.

Discussion and Conclusions

Research Question 1

Research Question 1 asked, “*What was the growth in leadership skills of participants over the duration of the agricultural leadership development program?*” Paired sample *t*-tests were conducted to determine whether participants had improved their leadership skills on a personal, business/professional, and societal/community level. Comparing the pre-test data to the post-test data revealed that participants perceived a significant improvement in their leadership skills on all three levels. Respondents reported that they improved the most on the societal/community level with an overall mean growth of 1.19. This finding is surprising when compared to the EvaluLEAD framework developed by Grove et al. (2005) which provides that participants of leadership development programs will receive the most direct benefits through the individual domain. When considering leadership development on the societal/community level, previous studies by Bolton (1991), Kaufman and Carter (2005), Kelsey and Wall (2003), and

Lamm et al. (2016) have revealed that participants in leadership development programs often gain the necessary skills needed to become leaders on the local level, however, these individuals often choose not to take an active role or assume leadership positions to benefit their communities. Even though participants are expected to have the greatest difference in mean growth on the personal level, this finding can be explained by the emphasis placed throughout the program on community engagement.

Throughout these programs, participants are provided opportunities to engage with a variety of individuals, organizations, and elected officials on the local, state, national, and international level (Horner, 1984; Langone, 1992). In addition, trainings and study tours are provided that allow participants to better understand the dynamics of working with others in the community as well as budgeting and how to be effective in their leadership roles. Through agricultural leadership development programs, participants have the opportunity to interact with a variety of individuals, including other members of their cohort, program leaders, or other agricultural and elected officials. Through these various interactions and the experiential learning opportunities provided during these programs, participants are able to experience a variety of positive leadership behaviors modeled by others. This correlates with Bandura's (1977, 1986) social learning theory which suggests that individuals learn behavior based on modeling, where individuals learn from others by observing their behaviors and imitating them. The findings regarding the societal/community level demonstrated that program alumni were able to develop skills that allowed them to become more effective in their leadership positions, while also increasing their engagement with agricultural groups and issues extending beyond the local level. The data suggests that participants were able to utilize the information and skills gained from the

training sessions, modules, discussions, and study tours to impact community development, issues, and practices occurring on a local, state, national, and international level.

The overall mean growth on the business/professional level was 1.06. In this section of the instrument, participants ranked that their networking skills improved the most throughout the duration of the program, impacting their businesses and careers. Improvement in skills such as networking, decision making, and problem solving have often been cited as benefits of leadership development programs (Black et al., 2006; Carter & Rudd, 2000; Earnest, 1996; Maltzberger & Majee, 2012; Rohs & Langone, 1993) and demonstrates the effect of these programs in improving an individual's business/professional skills enabling participants to identify issues and develop strategies to advance the agricultural industry. These findings support that the NCTTFC ALDP is producing individuals with the training and skills needed to positively impact their businesses and organizations. Research conducted by Black et al. (2006) on two leadership development programs found that participants were able to expand their network while also utilizing the training to improve their management strategies, identify issues, and implement new ideas to expand their operations. Findings indicate that the NCTTFC ALDP contributed to develop the whole individual by providing participants with the resources, knowledge, and skills to implement change within their businesses and communities.

The personal leadership development section of the instrument experienced the least amount of change in regard to the three domains of impact examined throughout this research study. The overall increase in mean growth reported from the paired sample *t*-test on the personal level was 0.9. Of the items representing personal leadership development, participants reported that they were more willing to seek out a mentor, were more aware of the value of their time, increased their self-confidence, were open to new ideas and concepts, and gained a greater

appreciation of cultural differences. Similar findings have been reported in literature (Carter & Rudd, 2000; Kaufman & Carter, 2005; Kincaid & Knapp, 1992; Rohs & Langone, 1993; Williams, 1981) in regard to various leadership development programs. Due to the perceived benefits of leadership development programs in regard to improving self-confidence, broadening perspectives, and appreciating what others can bring to the table (Black et al., 2006), the NCTTFC ALDP assigns personal coaches to serve as “mentors” for each participant. This is an important component of the program that strives to meet the needs of each participant’s personal leadership development journey, coaching each participant to reflect on their experiences and the diversity present throughout the program. As participants are able to engage with the facilitators, speakers, and others involved in the NCTTFC ALDP, a variety of different perspective emerge, allowing participants to take a different look at the issues and opportunities presented.

Based on the paired sample *t*-test findings, it can be concluded that the NCTTFC ALDP is effective in improving participants’ leadership development skills within the personal, business/professional, and societal/community domains. As discussed through Black’s (2006) theoretical model relating to statewide leadership development programs, Knowles’ andragogical model (1984), and Birkenholz’s adult learning principles (1999), in order for adults to maximize their learning in leadership development programs, they must be motivated and willing to receive the information and training provided. As leadership development programs plan for the future, program leaders and stakeholders must look into what opportunities and topics should be discussed within each of these programs for motivating potential participants to enroll in the program. Evaluation and analysis of leadership development programs will be important in the coming years to ensure that individuals from all sectors of the agricultural industry are prepared to handle the increasing challenges of the industry. Making sure that these programs are current,

applicable, and engaging will be crucial for individuals to learn important skills empowering them to make changes in their personal and business/professional lives, as well as in their communities.

Research Question 2

Research Question 2 asked, “*Where did the program participants use their leadership skills to impact their personal lives after completion of the agricultural leadership development program?*” Of the four statements regarding personal improvement after completing the NCTTFC ALDP, participants strongly agreed or agreed regarding their power to make a difference, their NCTTFC ALDP experience beginning a series of life changing events, being able to meet others and imitate their success, and others viewing them as being changed because of their participation in the program. The open-ended questions provided for a more in-depth understanding of the perceived benefits that participants had gained due to their involvement in the leadership program. In regard to Knowles’ (1970, 1980, 1984) andragogical model, those who participate in adult leadership development programs often enter the program seeking to learn skills or information that will be beneficial and effective for their personal lives. Knowles states that learning for adults can be induced through exposing the learner to role models where they can gauge where they currently are and where they want to be (Knowles, 1980, 1984).

Alumni reported that they gained the most from the Crucial Conversations training, had become more open-minded in understanding others’ point of view, and their relationships with others had improved. Several others reported that the study tours were very eye opening and beneficial, that they had been able to achieve personal development goals, and that they were more open to asking for help/mentorship. Howell et al. (1982) suggests that due to the experiential learning methods utilized throughout these programs, participants are able to expand

on their prior knowledge while also gaining new insights and understanding about the issues discussed. The findings suggest that adult leadership development programs benefit program participants through utilizing a variety of instructional strategies, experiential learning, and realistic problem-solving techniques. Birkenholz (1999) suggests that a variety of instructional practices are important for ensuring adult educational programs are beneficial for participants, ultimately preparing them with knowledge and skills that can be applied directly to their lives.

These findings correlate with the research conducted by Earnest (1996) regarding community leadership development programs and the use of various components to structure the programs by allowing participants the opportunity to learn about the topics of leadership and community development, followed by application of the material. Due to the nature of many leadership development programs in existence today, participants are able to engage with individuals on a local, state, national, and international level through institutes, seminars, and study tours (Black et al., 2006; Carter & Rudd, 2000; Kelsey & Wall, 2003). The variety of educational opportunities provided through these adult leadership programs are important strategies for assisting adult learners in obtaining the information, knowledge, and skills presented throughout these programs.

Research Question 3

Research Question 3 asked, “*Where did the program participants use their leadership skills to impact their business/professional lives after completion of the agricultural leadership development program?*” Participants were asked to respond with their agreement to three statements regarding their business/professional level improvement after completing the program. Overall, participants strongly agreed or agreed that they had improved on a business/professional level through building a better network of contacts, exposure to other

people and ideas to facilitate change in their farm/business, and that the program helped them to change the direction of their business/career. Alumni reported that they improved the most on expanding their network of contacts and being able to approach others, gained new positions within their current company with more responsibility/territory, improved their communication and facilitation skills in group settings, and were better able to identify and respond to changes in the industry with new and creative ways. Several participants indicated by responding to the open-ended questions that they had the opportunity to be promoted or were able to change careers which benefited their personalities and families. These findings agree with an evaluation conducted by Whent and Leising (1992) regarding an agricultural leadership program in California. Alumni reported that their participation in this program helped them to advance in their careers, increased their circle of contacts, allowed them to develop leadership skills, broadened their perspectives due to the travel component of the program, allowed them to interact with government officials and agricultural leaders, and developed a greater understanding of societies and cultures (Whent & Leising, 1992).

In addition to their personal level leadership development, participants felt that networking was one of the most beneficial components of their participation in the NCTTFC ALDP regarding their business/professional lives. Black et al. (2006), Kaufman and Carter (2005), Kaufman et al. (2010, 2012), Kelsey and Wall (2003), Maltzberger and Majee (2012), and Nistler et al. (2011) report that networking relationships are an important component and outcome of leadership development programs. The findings of this research indicate that participants of the NCTTFC ALDP agree that networking and building relationships with others are important components of these programs for achieving program objectives and enabling participants to impact their careers/businesses. Martineau et al. (2007) provide that leadership

development programs assist individuals in expanding their capacity to be effective in leadership roles, encourage collaboration across sectors and industries, and create leaders that can accelerate change in communities and countries to solve challenging and complex issues. These findings agree with an evaluation conducted by Black et al. (2006) utilizing the EvaluLEAD framework, where participants reported that they were able to network with other business leaders, improve their management strategies, implement changes, and bring new ideas to help improve or expand their operations.

Research Question 4

Research Question 4 asked, “*Where did the program participants use their leadership skills to impact their community engagement after completion of the agricultural leadership development program?*” Grove et al. (2005, 2007) provide that the societal/community outcomes of leadership development programs are most often thought of as the main reason for their existence. Participants reported that they had become more involved at the local level, became more aware of societal issues, understood the importance of budgets and how they impact rural development, and were more willing to participate in meetings and approach elected officials with issues or concerns. These findings relate to what Miller (1976) reported as two main goals of the Kellogg Farmer Study Program such as assisting participants in gaining a better understanding of the economic, political, and social framework of society and for them to apply what was learned to complex problems and concerns involving agriculture and rural communities. In addition, Howell et al. (1982) provided that the objectives of the first four leadership development programs included increasing participants’ ability to analyze public problems critically and objectively; understanding of the economic, social, political, and cultural aspects of public issues; improving leadership and group participant skills; and to develop an

understanding of important local, state, national, and international issues. The goals of the NCTTFC ALDP are often the same, providing program participants and alumni with the skills needed to be actively engaged in their communities.

Findings from this research study suggest that participants were able to utilize their skills gained throughout the program to impact their societal and organizational involvement, with several participants increasing their involvement as both members and committee member/officers at the state level. Participants also reported a slight increase in membership within organizations at the national level. This engagement is confirmed by the majority of individuals who responded to the organizational involvement metrics and improved their leadership skills. A total of 22 participants responded to the organizational involvement metrics representing the frequency of organizations reported at the local, state, and national levels. Respondents were involved in an average of three organizations, representing a total of 69 separate groups or associations. The community involvement finding revealed that the frequency of involvement within organizations remained approximately the same before and after the participants completed the NCTTFC ALDP. Due to the large time commitment of participating in the program, many individuals choose not to pursue additional involvements and leadership roles while completing the program. At the time the questionnaire was distributed to participants, alumni had been graduated from the NCTTFC ALDP less than one year, limiting the amount of time for participants to pursue other membership and leadership roles within their organizations and communities. The community involvement findings open up additional opportunities for research to be conducted on not just the quantity of involvement, but more specifically the quality of alumni involvement in membership and leadership roles.

Participants did report that they increased their involvement on the state level in both member and committee member/officer roles. This finding can be related back to the personal level of the instrument where participants reported that they became more aware of the value of their time and learned to manage their time more efficiently, realizing the need to decline some opportunities but accept others. In reference to the decrease in committee member/officer positions on the local level, many of the participants reported being officers on county and regional advisory councils. Many of these committee member/officer positions last for certain periods of time and could have ended over their two years while participating in the NCTTFC ALDP. A slight decrease in local level committee member/officer involvement can be explained by these types of positions held by participants and graduates of the program.

Even though the average number of organizations remained nearly the same before and after the completion of the NCTTFC ALDP, the findings indicate that some participants decided to decrease their involvement in certain organizations to be more effective in others. Overall, program alumni were involved in a variety of agricultural organizations on the local, state, and national levels. Kaufman and Carter (2005) report that many agricultural and leadership development programs have focused mainly on providing training in regard to the economic, political, and social aspects of communities, often disregarding the impact of how program participants can apply their knowledge and skills to assist in community development. Earnest (1996), Hustedde and Woodard (1996), Kaufman and Carter (2005), Kelsey and Wall (2003), Maltsberger and Majee (2012), and Sargent et al. (2003) have found that incorporating a practicum or capstone project into leadership development programs allow participants to put into practice the skills they have learned, while also motivating them to be involved and become active members in their communities. Due to past research conducted on leadership programs,

the NCTTFC ALDP requires participants to complete a practicum project that is related to a current agricultural or rural issue before they graduate from the program. Moving forward, program leaders and stakeholders should continue to monitor this aspect of the program to ensure participants are actively engaged and learning from their practicum experience.

Implications

Previous research studies have found there are many benefits of leadership development programs. These benefits include enhancing leadership skills, increasing self-confidence, broadening perspectives and understandings, and improving communication skills (Kaufman & Carter, 2005; Kincaid & Knop, 1992; Rohs & Langone, 1993; Williams 1981). Due to the lack of detailed research published on the outcomes of many agricultural leadership development programs, this study serves to add to the body of research surrounding agricultural leadership development program outcomes and evaluation. Findings from this study confirmed that participants had improved their leadership development skills and were able to take what they had learned from the program to improve their personal lives, businesses and organizations, and their community involvement.

The information and data collected from this research study focused on the impacts and outcomes that alumni experienced due to their participation in the NCTTFC ALDP. The outcomes documented by this study can be used in marketing future programs to potential participants as well as sponsors and donors of the program, allowing for their continued support. This study also serves as a beneficial resource for program leaders, stakeholders, facilitators, and sponsors of the program to understand where and how participants are utilizing what they learned throughout the NCTTFC ALDP and how they are applying it to their personal lives.

Currently, NCTTFC ALDP leaders utilize the program mission and vision statement, session evaluations, and research supported leadership topics to assist in planning and implementing the NCTTFC ADLP, however, there are no specific objectives that currently guide the program, limiting the ability of program leaders and stakeholders to assess if the program is meeting its intended goals and purpose. The results of this research highlighted specific components of the program, allowing the researcher to develop measurable objectives for the NCTTFC ALDP. Implementing the proposed objectives will serve as a valuable tool in recruiting potential participants to complete the program while also allowing external sponsors and donors to understand the various components of the NCTTFC ALDP and its impact on the personal, business/professional, and societal/community levels. Furthermore, the data, findings, and conclusions drawn from this study serve to inform similar statewide agricultural leadership development programs on how to assess program outcomes and impacts that could potentially lead to improved program planning and implementation.

Recommendations

The primary purpose of this study was to understand how program alumni perceived their change in leadership skills on a personal, business/professional, and societal/community level due to their involvement in the NCTTFC ALDP. In addition, the researcher was interested in how participants have used the skills gained throughout the program and applied them to their personal lives, within their businesses/organizations, and in their communities. This study was an important starting point in gathering outcome data on the program because no prior evaluation data exist about the NCTTFC ALDP. Recommendations for practice and future research in regard to the NCTTFC ALDP are provided below.

Recommendations for Practice

To further improve the NCTTFC ALDP, specific objectives and outcomes should be developed and implemented to assist program leaders and stakeholders in determining if the program is meeting its intended goals and purpose. The results of this research allowed the researcher to develop specific and measurable objectives for the program. The following objectives are proposed based on the findings of this research study:

Upon completion of the NCTTFC ALDP, participants will:

1. Develop networking relationships, broaden their perspectives, and gain a greater appreciation for diversity through the various components and international study tour of the program.
2. Improve their self-confidence, communication, teamwork, and leadership skills, expanding their capacity and desire to be effective in leadership roles within organizations and communities.
3. Identify issues and challenges faced by the agricultural industry and rural communities and develop strategies to respond with new and innovative ways.
4. Create a personal development plan by working with their assigned coach to meet the needs of their continued leadership development.
5. Increase and expand their knowledge of relevant issues facing the agricultural industry and rural communities and will enhance their civic responsibility.

Utilizing these overarching objectives, program leaders will be able to determine if the NCTTFC ALDP is accomplishing its specific goals and purpose. Additionally, having specific objectives allows for further evaluations to be conducted focusing on each component of the two year program through the use of smaller evaluations after each session or study tour. Conducting

smaller evaluations throughout the program's duration will help to ensure that all sessions are meaningful and are preparing individuals with the resources, knowledge, and skills to improve their leadership skills and create change within their organizations and communities. Continually performing evaluations of the NCTTFC ALDP will serve as a management strategy for demonstrating the benefits of this program to participants and will justify the resources invested into the program from stakeholders, sponsors, and donors.

Grove et al. (2005) provide that the individual domain is where most of the direct benefits of a leadership development program occur. However, the data from this research study suggest that graduates of the 2017-2019 NCTTFC ALDP cohort improved the least on this level when compared to their business/professional and societal/community leadership development. NCTTFC ALDP's leadership team should seek assistance and feedback from similar statewide leadership development program coordinators, Extension professionals, and other leadership development consultants to gain insight and recommendations for the implementation of new curriculum and programming in order to improve this component of the program.

Graduates of the program have reported the benefits of being able to interact and learn from a variety of individuals throughout its duration. To continually improve this aspect of the program and to ensure participants are equipped to stay abreast of the challenges of the industry, the NCTTFC ALDP leadership team should work with commodity associations, Extension professionals, program alumni, and others involved in the agricultural industry to recruit a strong pool of applicants into the program that represent the variety of commodities and farming operations in North Carolina. This is a necessity because program alumni have reported the benefits of diversity within these programs, allowing them to broaden their horizons and be open to others' point of view (Black et al., 2006; Carter & Rudd, 2000; Helstowski, 2000).

Furthermore, Black and Earnest (2009), Langone (1992), and Van De Valk (2008) provide that leadership development programs assist individuals in learning the importance of diversity and how to effectively work as a team in order to solve the complex problems that agriculturalists are faced with each day.

Program leaders should continue to develop training modules/seminars where participants can take theory and apply the information to their personal lives, businesses, and communities. Lamm et al. (2011) and Roberts (2006) suggest that experiential learning allows program participants to apply their knowledge, engage in reflection, and use the skills they have developed to generalize information outside of the specific learning environment. Respondents who participated in this research study reported the benefits of utilizing a variety of instructional strategies and experiential learning opportunities throughout the duration of the NCTTFC ALDP. However, Kaufman and Carter (2005) report that leadership development programs have focused mainly on providing training, often disregarding the impact of how program graduates can apply their knowledge and skills to become actively involved in their communities and assist with community development. Ensuring participants know how to apply the information gained through the program to their personal lives and communities by incorporating a capstone experiential learning project should be of top priority to those who plan and implement the program.

Moving forward with the NCTTFC ALDP, alumni should be involved in the continued planning and delivery of the program. These individuals can provide valuable insight into how the program needs to be updated and/or changed. Including alumni in leadership development programs creates opportunities for them to meet and engage with participants, allowing them to expand their network and provide valuable insight to program participants (Hustedde &

Woodard, 1996; Malstberger & Majee, 2012). In addition, program leaders and stakeholders should provide opportunities for continuing education so that alumni from these programs can benefit and learn important skills that will assist them in their continued leadership development (Earnest, 1996; Fritz et al., 2003; Hustedde & Woodard, 1996).

Recommendations for Future Research

To further strengthen this study, a qualitative study should be conducted by utilizing focus groups to better capture specifically how program alumni have improved on a personal, business/professional, and societal/community level since graduating from the program. Grove et al. (2007) suggest that evocative inquiry utilized in leadership development program evaluation attempts “to capture and re-create some of the richness and human dimension of what is happening or has happened” over a program’s duration (p. 82). Utilizing both quantitative and qualitative data, a more comprehensive view of the NCTTFC ALDP and its outcomes can be better understood as well as how alumni have applied what they learned throughout the program to their personal lives, in their businesses and organizations, and in their communities.

Due to the program catering to the needs of both farmers and others employed throughout the agricultural industry, there is an opportunity for further research comparing the impacts and outcomes perceived based on these two groups. Conducting focus groups comparing the farmers and non-farmers would provide additional insight on how the program can meet the expectations all participants and equip them to identify and respond to the increasing challenges experienced by the agricultural industry.

An additional opportunity for research could be conducting a similar evaluation study mainly focusing on the formative aspects of the program in order to determine ways to further improve the NCTTFC ALDP. Currently, the only evaluation data that exists regarding this

specific program is what was produced from this study. Additional evaluations would further allow program leaders to identify how the planning and implementation of the NCTTFC ALDP can be improved for future program cohorts. More specifically, including both program leaders and stakeholders in a formative evaluation will allow them to identify needed areas of improvement and plan for the future all while working to achieve successful outcomes for the program. Ultimately, a formative evaluation of the NCTTFC ALDP would serve to determine if the planning and implementation of the program need to be improved to better serve the needs of participants' leadership development and to ensure the program is generating a positive return on investment.

It is important to replicate this research with a larger audience of NCTTFC ALDP alumni to gain a better understanding of how the program has impacted all alumni since the program transitioned from the Philip Morris Agricultural Leadership Development Program to the NCTTFC ALDP. Incorporating a qualitative component into this study through the use of focus groups would allow for greater reflection and experiences to be shared, further detailing how alumni of the program have improved as a result of completing the leadership development program.

This research study asked participants to report their specific involvement with various organizations. Further examining community involvement would provide an additional opportunity for research, comparing the program alumni's quality versus quantity of involvement in specific organizations as well as how they have implemented the knowledge and skills gained after completing the program. A longitudinal study could be conducted on the NCTTFC ALDP over the duration of several years to continually identify how alumni have increased their community engagement in addition to any leadership roles they have accepted since graduating

from the program. A longitudinal study further exploring the leadership development of program graduates could be useful for documenting the long-term impacts of the program and can be used for future marketing and sponsorship of the NCTTFC ALDP.

An additional study could be employed to replicate this research with other agricultural leadership development programs to see if the programs are producing similar or varied results. Additional research will allow for further analysis and comparison of the effectiveness of the NCTTFC ALDP in developing the capacity of individuals to create change and assume leadership roles on the personal, business/professional, and societal/community levels. A collaborative research opportunity exists for these agricultural leadership development programs to further identify successes, challenges, and opportunities to improve their planning and implementation.

REFERENCES

- Abramson, C. I., Damron, W. S., Dicks, M., & Sherwood P. M. A. (2014). History and mission. In R. J. Sternberg (Ed.), *The modern land-grant university* (pp. 3-13). Purdue University Press.
- Adams, R. (2019). *N.C. agriculture: Feeding families, growing the economy*. North Carolina State University Extension. <https://ipm.ces.ncsu.edu/2019/06/n-c-agriculture-feeding-families-growing-the-economy/>
- American Farm Bureau Federation. (2019). *Fast facts about agriculture & food*. <https://www.fb.org/newsroom/fast-facts>
- Apaliyah, G., & Martin, K. E. (2013). An analysis of the effects of community leadership education program content on six outcome indices of community leadership. *Community Development, 44*(4), 456-468. <https://doi.org/10.1080/15575330.2013.795991>
- Atiles, J. H., Jenkins, C., Rayas-Duarte, P., Taylor, R. K., & Zhang, H. (2014). Service, cooperative extension, and community engagement. In R. J. Sternberg (Ed.), *The modern land-grant university* (pp. 59-81). Purdue University Press.
- Bandura, A. (1977). *Social learning theory*. Prentice-Hall, Inc.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall, Inc.
- Bigelow, D. P., & Borchers, A. (2017). *Major uses of land in the United States, 2012* (EIB No. 178). United States Department of Agriculture Economic Research Service. <https://www.ers.usda.gov/webdocs/publications/84880/eib-178.pdf?v=0>

- Birkenholz, R. J. (1999). *Effective adult learning*. Interstate Publishers, Inc.
- Black, A. M. (2006). *Evaluating the effectiveness of an Ohio statewide agricultural leadership program* [Doctoral dissertation, The Ohio State University]. OhioLINK.
https://etd.ohiolink.edu/!etd.send_file?accession=osu1141753752&disposition=inline
- Black, A. M., & Earnest, G. W. (2009). Measuring the outcomes of leadership development programs. *Journal of Leadership & Organizational Studies*, 16(2), 184-196.
<https://doi.org/10.1177/1548051809339193>
- Black, A. M., Metzler, D. P., & Waldrum, J. (2006). That program really helped me: Using focus group research to measure the outcomes of two statewide leadership programs. *Journal of Leadership Education*, 5(3), 53-65. https://journalofleadershiped.org/wp-content/uploads/2019/02/5_3_Black_Metzler_Waldrum.pdf
- Bolton, E. B. (1991). Developing local leaders: Results of a structured learning experience. *Journal of the Community Development Society*, 22(1), 119-143.
<https://doi.org/10.1080/15575339109489954>
- Brown, A. B. (2016a). *About*. North Carolina Cooperative Extension, NC Tobacco Trust Fund Commission Agricultural Leadership Development Program.
<https://calsleadership.ces.ncsu.edu/about-calsleadership/>
- Brown, A. B. (2016b). *History*. North Carolina Cooperative Extension, NC Tobacco Trust Fund Commission Agricultural Leadership Development Program.
<https://calsleadership.ces.ncsu.edu/history-2/>
- Carter, H., & Rudd, R. (2000). Evaluation of the Florida Leadership Program for Agriculture and Natural Resources. *Journal of Southern Agricultural Education Research*, 50.
<http://www.jsaer.org/pdf/Vol50/50-00-199.pdf>

- Center for Sustainable Systems. (2019, August). *U.S. Food System Factsheet* (Pub. No. CSS01-06). University of Michigan.
http://css.umich.edu/sites/default/files/Food%20System_CSS01-06_e2019.pdf
- Cooper, M. (1985). *Community leadership: A county perspective*. University of Georgia, Athens.
- Crittenden, W. F. (2005). A social learning theory of cross-functional case education. *Journal of Business Research*, 58(7), 960-966. <https://doi.org/10.1016/j.jbusres.2003.12.005>
- Daugherty, R. A., & Williams, S. E. (1997). The long term impacts of leadership development: An assessment of a statewide program. *The Journal of Leadership Studies*, 4(2), 101-115.
<https://doi.org/10.1177%2F107179199700400210>
- Davis, T. R. V., & Luthans, F. (1980). A social learning approach to organizational behavior. *The Academy of Management Review*, 5(2), 281-290. <https://www-jstor-org.prox.lib.ncsu.edu/stable/257438>
- Deim, K. G., & Nikola, M. P. (2005). Evaluating the impact of a community agricultural leadership development program. *Journal of Extension*, 43(6).
<https://www.joe.org/joe/2005december/rb5.php>
- Dhanakumar, V. G., Rossing, G., & Campbell, G. R. (1996). An evaluation of the Wisconsin rural leaders perspective program. *Journal of Extension*, 34(3).
<https://www.joe.org/joe/1996june/rb3.php>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). John Wiley & Sons Inc.

- Dimitri, C., Efland, A., & Conklin, N. (2005, June). *The 20th century transformation of U.S. agriculture and farm policy* (EIB-3). United States Department of Agriculture Economic Research Service.
https://www.ers.usda.gov/webdocs/publications/44197/13566_eib3_1_.pdf?v=0
- Earnest, G. W. (1996). Evaluating community leadership programs. *Journal of Extension*, 34(1).
<https://www.joe.org/joe/1996february/rb1.php>
- Fritz, S. M., Williams, S. N., Barbuto, J., E., Jr. (2003). Continuing education needs of leadership program alumni. *Journal of Leadership Education*, 2(2), 3-12.
https://journalofleadershiped.org/wp-content/uploads/2019/02/2_2_Fritz_Williams_Barbuto.pdf
- George, D., & Mallery, P. (2011). *SPSS for Windows step by step: A simple guide and reference 18.0 update* (11th ed.). Allyn & Bacon.
- Gibson, S. K. (2004). Social learning (cognitive) theory and implications for human resource development. *Advances in Developing Human Resources*, 6(2), 193-210.
<https://doi.org/10.1177/1523422304263429>
- Goedhart, H., & Hoogstraten, J. (1992). The retrospective pretest and the role of pretest information in evaluation studies. *Psychological Reports*, 70(3), 699-704.
<https://doi.org/10.2466/pr0.1992.70.3.699>
- Grove, J. T., Kibel, B. M., & Haas, T. (2005, January). *EvaluLEAD: A guide for shaping and evaluating leadership development programs*. Sustainable Leadership Initiative.
http://leadershiplearning.org/system/files/evalulead_0.pdf

- Grove, J. T., Kibel, B. M., & Haas, T. (2007). EvaluLEAD: An open-systems perspective on evaluating leadership development. In K. M. Hannum, J. W. Martineau, & C. Reinelt (Eds.), *The handbook of leadership development evaluation* (pp. 71-110). Jossey-Bass.
- Grove, J., & PLP Team. (2002, March). *The EvaluLEAD framework. Examining success and meaning: A framework for evaluating leadership development interventions in global health* [Position paper].
<https://pdfs.semanticscholar.org/18b7/adb708c7e88589b936e1e825f586da0e54ab.pdf>
- Hejny, T. A. (2010). *Discovering the leadership skills of alumni who participated in an adult agricultural leadership development program: A case study* [Doctoral dissertation, University of Nebraska-Lincoln]. UNL DigitalCommons.
<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1089&context=cehsdiss>
- Helstowski, L. W. (2000). *The legacy of the ag leadership development program: Rich heritage cultivates future opportunities*. W. K. Kellogg Foundation.
- Horner, J. T. (1984). Developing effective agricultural leaders. *Journal of Extension*, 22(6).
<https://www.joe.org/joe/1984november/a3.php>
- Howell, R. E., Weir, I. L., & Cook, A. K. (1982). *Development of rural leadership: Problems, procedures, and insights*. W. K. Kellogg Foundation.
- Huffman, M. (2019). *About*. NC State Extension, Executive Farm Management.
<https://execfarmmgmt.ces.ncsu.edu/about-execfarmmgmt/>
- Hustedde, R. J., & Woodard, A. (1996). *Designing a rural leadership program and curriculum* (IP-54). University of Kentucky Cooperative Extension Service.
- Johnson, T. (1998). *A review of ag-based leadership programs*. Michigan State University.

- Jordan, J. P., Buchanan, G. A., Clarke, N. P., & Jordan, K. C. (2013). *Leadership in agriculture: Case studies for a new generation*. Texas A&M University Press.
- Kaufman, E. K., & Carter, H. S. (2005). Agricultural leadership development: From networking to application. *Journal of Leadership Education*, 4(2), 66-75.
http://journalofleadershiped.org/attachments/article/140/Jole_4_2_Kaufman_Carter.pdf
- Kaufman, E. K., Rateau, R. J., Carter, H. S., & Strickland, L. R. (2012). What's context got to do with it? An exploration of leadership development programs for the agricultural community. *Journal of Leadership Education*, 11(1), 121-139.
<http://www.journalofleadershiped.org/attachments/article/103/Kaufman%20Rateau%20Carter%20and%20Strickland.pdf>
- Kaufman, E. K., Rateau, R. J., Ellis, K. C., & Kasperbauer, H. J., & Stacklin, L. R. (2010). Leadership program planning: Assessing the needs and interests of the agricultural community. *Journal of Leadership Education*, 9(1), 122-143.
http://www.journalofleadershiped.org/attachments/article/165/JOLE_9_1_Kaufman_Rateau_Ellis.pdf
- Kaufman, E. K., & Rudd, R. D. (2006). Rural leadership development: A synthesis of research. *Journal of Leadership Education*, 5(3), 128-141.
<http://faculty.usi.edu/media/1428/student-leadership-programming-model-revisited.pdf#page=140>
- Kelsey, K. D., & Wall, L. J. (2003). Do agricultural leadership programs produce community leaders? A case study of the impact of an agricultural leadership program on participants' community involvement. *Journal of Agricultural Education*, 44(4), 35-46.
<https://doi.org/10.5032/jae.2003.04035>

- Kincaid, J. M., & Knop, E. C. (1992). *Insights and implications from the Colorado rural revitalization project, 1988-1991: A final evaluation report*. Colorado State Department of Local Affairs.
- Knobloch, N. A. (2003). Is experiential learning authentic? *Journal of Agricultural Education*, 44(4), 22-34. <https://doi.org/10.5032/jae.2013.04022>
- Knowles, M. S. (Ed.). (1960). *Handbook of adult education in the United States*. Adult Education Association of the U.S.A.
- Knowles, M. S. (1970). *The modern practice of adult education: Andragogy versus pedagogy*. Association Press.
- Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Association Press.
- Knowles, M. S. (1984). *Andragogy in action: Applying the modern principles of adult learning*. Jossey-Bass Publishers.
- Lamm, A. J., Cannon, K. J., Roberts, T. G., Irani, T. A., Unruh Snyder, L. J., Brendemuhl, J. & Rodriguez, M. T. (2011). An exploration of Reflection: Expression of Learning style in an international experiential learning context. *Journal of Agricultural Education*, 52(3), 122-135. <https://doi.org/10.5032/jae.2011.03122>
- Lamm, K. W., Carter, H. S., & Lamm, A. J. (2016). Evaluating extension based leadership development programs in the southern United States. *Journal of Agricultural Education*, 57(1), 121-136. <https://doi.org/10.5032/jae.2016.01121>
- Langone, C. A. (1992). Building community leadership. *Journal of Extension*, 30(4). https://www.joe.org/joe/1992winter/a7.php/site_urljournal-current-issue.php
- Lefrancois, G. (1999). *The lifespan* (6th ed). Wadsworth.

- Maltsberger, B., & Majee, W. (2012). Building regional networking capacity through leadership development: The case of leadership northwest Missouri, *Journal of Extension*, 50(4).
<https://joe.org/joe/2012august/a3.php>
- Martineau, J. W., Hannum, K. M., Reinelt, C. (2007). Introduction. In K. M. Hannum, J. W. Martineau, C. Reinelt. (Eds.), *The handbook of leadership development evaluation* (pp. 1-11). Jossey-Bass.
- McKee, V. L., Odom, S. F., Moore, L. L., & Murphrey, T. P. (2016). Impacts of an agricultural leadership extension program for county officials. *Journal of Agricultural Education*, 57(4), 202-216. <https://doi.org/10.5032/jae.2016.04202>
- Meehan, D., & Reinelt, C. (2007). Accelerating learning about leadership development: A learning community approach. In Hannum, K., Martineau, J., & Reinelt, C. (Eds.), *The handbook of leadership development evaluation* (pp. 511-535). San Francisco, CA: Jossey-Bass.
- Merriam, S. B., & Caffarella, R. S. (1991). *Learning in adulthood: A comprehensive guide*. Jossey-Bass.
- Merriam, S. B., Caffarella, R. S., Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed.). Jossey-Bass.
- Miller, H. L. (Ed.). (1976). *The Kellogg Farmers Study Program: An experience in rural leadership development*. Michigan State University.

- Moore, L. L., Boyd, B. L., Rosser, M. H., & Elbert, C. (2009). Developing an international agricultural leadership program to meet the needs of a global community. *Journal of Leadership Education*, 8(1), 118-129.
http://www.journalofleadershiped.org/attachments/article/201/JOLE_8_1_Moore_Boyd_Rosser.pdf
- Moore, L. L., & Rudd, R. D. (2004). Leadership skills and competencies for extension directors and administrators. *Journal of Agricultural Education*, 44(3), 22-33.
<https://doi.org/10.5032/jae.2004.03022>
- Nistler, D. L., Lamm, A. J., & Stedman, N. (2011). Evaluating the influences on extension professionals' engagement in leadership roles. *Journal of Agricultural Education*, 52(3), 110-121. <https://doi.org/10.5032/jae.2011.03110>
- North Carolina Department of Agriculture and Consumer Services. (2010). *2010 North Carolina Agricultural Statistics* (No. 212).
https://www.nass.usda.gov/Statistics_by_State/North_Carolina/Publications/Annual_Statistical_Bulletin/AgStat2010.pdf
- North Carolina Department of Agriculture and Consumer Services. (2018). *2018 North Carolina Agricultural Statistics* (No. 219). <http://www.ncagr.gov/stats/AgStat/NCAgStatBook.pdf>
- North Carolina State University. (n.d.). *CALS Partnerships*. College of Agriculture and Life Sciences. <https://cals.ncsu.edu/partnerships/>
- North Carolina Tobacco Trust Fund Commission. (n.d.) *About the TTFC*.
<http://tobaccotrustedfund.org/about-the-ttfc/>

North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program

(2017). *Participant Directory 2017-2019*. Retrieved from

[https://calsleadership.ces.ncsu.edu/wp-](https://calsleadership.ces.ncsu.edu/wp-content/uploads/2018/04/AgLeadershipDevelopment-120617-ForWeb-Final-02192018.pdf?fwd=no)

[content/uploads/2018/04/AgLeadershipDevelopment-120617-ForWeb-Final-](https://calsleadership.ces.ncsu.edu/wp-content/uploads/2018/04/AgLeadershipDevelopment-120617-ForWeb-Final-02192018.pdf?fwd=no)

[02192018.pdf?fwd=no](https://calsleadership.ces.ncsu.edu/wp-content/uploads/2018/04/AgLeadershipDevelopment-120617-ForWeb-Final-02192018.pdf?fwd=no)

Nuffield International Farming Scholars. (n.d.). *About Nuffield International*.

<https://www.nuffieldinternational.org/about.html>

Pratt, C. C., McGuigan, W. M., & Katzev, A. R. (2000). Measuring program outcomes: Using retrospective pretest methodology. *American Journal of Evaluation, 21*(3), 341-349.

<https://doi.org/10.1177%2F109821400002100305>

Reinelt, C., Foster, P., & Sullivan, S. (2002). *Evaluating outcomes and impacts: A scan of 55 leadership development programs*. W. K. Kellogg Foundation.

Roberts, T. G. (2006). A philosophical examination of experiential learning theory for agricultural teachers. *Journal of Agricultural Education, 47*(1), 17-29.

<https://doi.org/10.5032/jae.2006.01017>

Robinson, J. S., Garton, B. L., & Terry, R., Jr. (2007). Identifying the employability skills needed in the workplace according to supervisors of college of agriculture, food, and natural resources graduates. *Journal of Southern Agricultural Education Research, 57*(1).

<https://pdfs.semanticscholar.org/b6e9/1eef4cbbedd7bda3c16a56a691637f58def4.pdf>

Rockwell, S. K., & Kohn, H. (1989). Post-then-pre evaluation. *Journal of Extension, 27*(2).

<https://www.joe.org/joe/1989summer/a5.php>

- Rodriguez, M. T., & Lamm, A. J. (2016). Identifying student cultural awareness and perceptions of different cultures. *Journal of Agricultural Education, 57*(2), 106-118.
<https://doi.org/10.5032/jae.2016.021061>
- Rohs, F. R., & Langone, C. A. (1993). Assessing leadership and problem-skills and their impacts in the community. *Evaluation Review, 17*(1), 109-115.
<https://doi.org/10.1177/0193841X9301700108>
- Rossing, B. E., & Heasley, D. K. (1987). Enhancing public affairs participation through leadership development education: Key questions for community development research and practice. *Journal of Community Development, 18*(2), 98-116.
<https://doi.org/10.1080/15575338709490028>
- Russon, C., & Reinelt, C. (2004). The results of an evaluation scan of 55 leadership development programs. *Journal of Leadership and Organizational Studies, 10*(3), p. 104-107.
<https://doi.org/10.1177/107179190401000309>
- Sargent, S. D., Pennington, P., & Sitton, S. (2003, July 16-19). *Developing leadership skills through capstone experiences* [Paper presentation]. Association of Leadership Educators International Conference, Anchorage, AK, United States.
<https://www.leadershipeducators.org/Resources/Documents/Conferences/Anchorage/sargent1.pdf>
- Scheffert, D. R. (2007). Community leadership: What does it take to see results? *Journal of Leadership Education, 6*(1), 175-190.
http://www.journalofleadershiped.org/attachments/article/290/Jole_6_1_Scheffert.pdf

- Shepherd, A. W., Cadilhon, J.-J., Galvez, E. (2009). *Commodity associations: A tool for supply chain management?* Agricultural management, marketing and finance occasional paper (No. 24). Food and Agriculture Organization of the United Nations, Rome.
- <http://bdsknowledge.org/dyn/bds/docs/747/Commodity%20Associations%20Supply%20Chain.pdf>
- Solansky, S. T. (2010). The evaluation of two key leadership development components: Leadership skills assessment and leadership mentoring. *The Leadership Quarterly*, 21(4), 675-681. <https://doi.org/10.1016/j.leaqua.2010.06.009>
- Sowik, M., Bengel, M., & Niewoehner-Green, J. (2018). A practical solution to developing county extension director's leadership skills: Exploring the design, delivery and evaluation of an online leadership development program. *Journal of Agricultural Education*, 59(3), 139-153. <https://doi.org/10.5032/jae.2018.03139>
- Sue, V. M. & Ritter, L. A. (2012). *Conducting online surveys* (2nd ed.). SAGE.
- Terborg, J. R., Howard, G. S., & Maxwell, S. E. (1980). Evaluating planned organizational change: A method for assessing alpha, beta, and gamma change. *Academy of Management Review*, 5(1), 109-121.
- United States Council of Economic Advisers. (2013, March). *Economic report of the president: Transmitted to the Congress*. Government Printing Office.
- United States Department of Agriculture Economic Research Service. (2018a). *Ag and food sectors and the economy*. Retrieved January 7, 2020, from <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/>

United States Department of Agriculture Economic Research Service. (2018b). *America's diverse family farms 2018 Edition* (EIB No. 203).

<https://www.ers.usda.gov/webdocs/publications/90985/eib-203.pdf?v=6080>

United States Department of Agriculture Economic Research Service. (2019). Agricultural trade. Retrieved January 8, 2020, from <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/agricultural-trade/>

United States Department of Agriculture National Agricultural Statistics Service. (n.d.). *2018 state agriculture overview: North Carolina*. Retrieved January 10, 2020, from https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=NORTH%20CAROLINA

United States Department of Agriculture National Agricultural Statistics Service. (2019, April). *2017 census of agriculture highlights: Farm producers* (No. ACH17-2). https://www.nass.usda.gov/Publications/Highlights/2019/2017Census_Farm_Producers.pdf

Van De Valk, L. J. (2008). Leadership development and social capital: Is there a relationship? *Journal of Leadership Education*, 7(1), 47-64. <https://pdfs.semanticscholar.org/a370/cf05339773ecfee2a89a661590ae07af39b6.pdf>

Van De Valk, L. J. (2010). *Program theory in leadership development: A structured conceptualization exercise for the LEAD New York program* [Doctoral dissertation, Cornell University]. eCommons. <https://ecommons.cornell.edu/bitstream/handle/1813/17106/Van%20De%20Valk%2c%20Lawrence.pdf?sequence=1&isAllowed=y>

- Vogt, W. P. (2005). *Dictionary of statistics & methodology: A nontechnical guide for the social sciences* (3rd ed.). Sage Publications.
- Wall, L. J., Pettibone, T. J., Kelsey, K. D. (2005). The impact of socioeconomic status on leadership potential in an agricultural leadership program. *Journal of Southern Agricultural Education Research*, 55(1), 153-161. <http://www.jsaer.org/pdf/Vol55/55-01-153.pdf>
- Whent, S. & Leising, J. (1992). A twenty-year evaluation of the California agricultural leadership program. *Journal of Agricultural Education*, 15(3), 32-39.
<https://doi.org/10.5032/jae.1992.03032>
- Williams, A. S. (1981). Training rural citizens: An evaluation of a leadership training program. *Journal of the Community Development Society*, 12(1), 63-82.
<https://doi.org/10.1080/15575330.1981.9987124>
- Wingenbach, G. J., Boyd, B. L., Lindner, J. R., Dick, S., Arispe, S., & Haba, S. (2003). Students' knowledge and attitudes about international agricultural issues. *Journal of International Agricultural and Extension Education*, 10(3), 25-35.
<https://doi.org/10.5191/jiaee.2003.10304>

APPENDICES

Appendix A

Institutional Review Board Approval

Dear Daniel Radford:

Date: October 2, 2019

IRB Protocol 20298 has been assigned Exempt status

Title: The Effectiveness of the North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program in Developing Leadership Skills

PI: Marshall, Joy Morgan

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101. Exempt d.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review. This approval does not expire, but any changes must be approved by the IRB prior to implementation.

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.
2. Any changes to the protocol and supporting documents must be submitted and approved by the IRB prior to implementation.
3. If any unanticipated problems or adverse events occur, they must be reported to the IRB office within 5 business days by completing and submitting the unanticipated problem form on the IRB website: <http://research.ncsu.edu/sparcs/compliance/irb/submission-guidance/>.
4. Any unapproved departure from your approved IRB protocol results in non-compliance. Please find information regarding non-compliance here: http://research.ncsu.edu/sparcs-docs/irb/non-compliance_faq_sheet.pdf.

Please let us know if you have any questions.

NCSU IRB Office

Appendix B

Survey Invitation

Dear [First Name],

I hope this message finds you well! It is hard to believe that the North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program (NCTTFC ALDP) originally started over 35 years ago. We are preparing for our 13th cohort and we do not have any research information to what effects, if any, there have been with our alumni. We need your help in determining the outcomes of the NCTTFC ALDP.

As part of my master's thesis research, I have modified a survey to determine the outcomes of the NCTTFC ALDP. This survey will measure the effects that the program has had on an individual, business, and community level. This survey was developed with the help of Dr. Joy Morgan Fleming and several other NC State University faculty members that have experience working with agricultural leadership development programs and evaluation research.

A web link to the survey has been included at the end of this email. If you decide to participate in the study, it is recommended that you complete the survey in a private location (e.g. not at the library or at work), on your own private network, and utilize your browsers private/incognito mode. After completing the survey, it is recommended that you erase your browser history and close the browser.

The survey will be administered through Qualtrics and your responses will be kept strictly confidential. The results of this online survey will help us identify what outcomes the NCTTFC ALDP is producing among alumni. You will never be identified individually and the results will only be published as group data (i.e. averages, statistical deviation, etc.). A follow-up email will be sent after the initial email request re-inviting you to participate in the study if you have not already completed the survey. The more alumni that complete the survey the more understanding we will gain about the impacts of the program.

The information you provide will serve as a valuable resource for program leaders, facilitators, and stakeholders to improve the planning and implementation of the NCTTFC ALDP. Your participation is extremely valued and appreciated.

Questions or Problems:

This survey has been granted approval by the Institutional Review Board at North Carolina State University. You are encouraged to ask questions at any time during the study.

- For further information on the study, send a message to daradfor@ncsu.edu or call Daniel Radford at 919-222-4782.
- If you have questions about your rights as a research participant, please contact the NC State IRB office at irb-director@ncsu.edu or call 1-919-515-8754.

Please click the link below to access the survey (or copy and paste the URL into your Internet browser):

Follow this link to the Survey:

[Take the Survey](#)

Or copy and paste the URL below into your internet browser:

https://ncsu.qualtrics.com/jfe/preview/SV_8iv62PJ09pWfXj7?Q_CHL=preview

Follow the link to opt out of future emails:

[Click here to unsubscribe](#)

With much gratitude,

Daniel Radford
Graduate Assistant

Appendix C

Survey Instrument

Default Question Block

You are invited to participate in a research project designed to gain a better understanding of the effectiveness of developing leadership skills in program alumni of the North Carolina Tobacco Trust Fund Commission Agricultural Leadership Development Program (NCTTFC ALDP). The purpose of this study is to understand the growth in leadership skills over the duration of the program, where participants used their leadership skills to impact their business/professional lives, and where the participants of the program used their leadership skills to impact their communities after completion of the program. While there are no direct benefits of this research study, the input you provide will be beneficial for stakeholders, directors and facilitators in future planning and implementation of the program. This minimal risk survey will take approximately 15-20 minutes to complete. There will be no personally identifiable information collected and obtained from your participation in the survey which could identify your participation in the study. Your participation is completely voluntary and you may stop taking the survey at any time with no penalty by closing your web browser. At any time during the survey, you may skip questions that you do not feel completely comfortable answering. If you have any questions or wish to be provided more information about your participation in the study please contact Daniel Radford at daradfor@ncsu.edu or 919-222-4782. In addition, if you have questions about your rights as a participant of this research study please contact the NC State IRB office at irb-director@ncsu.edu or call 1-919-515-8754.

I am fully aware of the nature and extent of my participation in this project as stated above. I hereby acknowledge and voluntarily agree to participate in this study. I acknowledge that I have read this consent statement and I am 18 years of age or older.

- Yes, I agree.
- No, I do not wish to participate.

Thank you for agreeing to participate in this survey! The survey is divided into three sections based on personal, business/professional, and community levels. Your input is extremely valued and will serve an important role in assisting the future planning and implementation of the NCTTFC ALDP.

Thank you again for your participation!

Please click next to begin the survey.

Thank you for indicating you would not like to participate in this study. If you decide you would like to participate in this study, please follow the link included in the initial email or contact Daniel Radford at daradfor@ncsu.edu or 919-222-4782.

The following statements refer to your NCTTFC ALDP experience on a **personal level**. For each statement, please indicate your level of competence before and after your NCTTFC ALDP experience.

Pre-ALDP						Post-ALDP				
Very Low	Low	Moderate	High	Very High		Very Low	Low	Moderate	High	Very High
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My community involvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My self-confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My creative thinking skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My business skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My awareness of the value of my time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My value of my family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My exposure to new ideas and concepts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My critical thinking skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My appreciation of cultural differences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My desire to seek out a mentor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree with each of the following statements as each applicable to you after completing the program?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
People describe me as being changed by my NCTTFC ALDP experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Due to my NCTTFC ALDP experience, I was able to meet people whose success I could imitate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My NCTTFC ALDP experience began a series of life changing events for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The NCTTFC ALDP helped me to realize that I have the power to make a difference within the ag industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you improved on a **personal level** because of your NCTTFC ALDP experience?

- Yes
- No

Please describe your **personal** improvement:

As a result of your NCTTFC ALDP experience, did you decide to pursue further formal education?

- Yes
- No

What degree/certification did you receive or are you working towards?

The following statements refer to your NCTTFC ALDP experience on a **business/professional level**. For each statement, please indicate your level of **business proficiency** before and after your NCTTFC ALDP experience.

Pre-ALDP						Post-ALDP				
Very Low	Low	Moderate	High	Very High		Very Low	Low	Moderate	High	Very High
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My business/organizational decision making skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My networking skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My ability to respond to problems or situation more effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My approach to problem solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My use of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My involvement in professional organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My use of resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree with each of the following statements as each applicable to you after completing the program?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The exposure to other people and ideas helped facilitate change in my farm/business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My NCTTFC ALDP experience helped me to change the direction of my business/career	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The NCTTFC ALDP helped me to build a better network of contacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you improved on a **business/professional level** (work/career) because of your NCTTFC ALDP experience?

- Yes
- No

Please describe your improvement on a **business/professional level**:

As a result of the NCTTFC ALDP experience did you change careers?

- Yes
- No

Please describe the career change you made:

The following items deal with your NCTTFC ALDP experience on a **societal/community level**. For each statement, please indicate your **societal/community involvement** before and after your NCTTFC ALDP experience.

Pre-ALDP						Post-ALDP				
Very Low	Low	Moderate	High	Very High		Very Low	Low	Moderate	High	Very High
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My involvement with groups/issues on a local level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My involvement with groups/issues on a state level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My involvement with groups/issues on a national level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pre-ALDP						Post-ALDP				
Very Low	Low	Moderate	High	Very High		Very Low	Low	Moderate	High	Very High
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My involvement with activities/issues in other countries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My awareness of the diversity of agriculture throughout North Carolina	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My awareness of the importance of budgets within communities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My understanding that I sometimes need to say "no" to some tasks in order to be more effective in leadership positions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My understanding of an individual's values and its impact on community development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you improved on a **societal/community level** because of your NCTTFC ALDP experience?

- Yes
- No

Please describe your improvement on a **societal/community level**:

Please describe any community projects that you have initiated or championed because of your experience in the NCTTFC ALDP:

Please report up to five organizations that you are involved with on a personal, professional/business, or community level. Examples include Farm Bureau, commodity associations, religious organizations, Cooperative Extension/4-H, Chamber of Commerce, school board, etc.

Please indicate your involvement within these organizations (member and/or committee member/officer) before and after completing the NCTTFC ALDP. Please **select all** of the appropriate information representing the organizations you have been or are a part of.

Pre-ALDP Member			Pre-ALDP Committee Member/Officer				Post-ALDP Member			Post-ALDP Committee Member/Officer		
Local	State	National	Local	State	National		Local	State	National	Local	State	National
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organization <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organization <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organization <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organization <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organization <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organization <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you hold any elected government positions?

- Yes
- No

Please list any elected government positions that you hold:

Please select a number below to indicate the level of change that you experienced on a personal level because of your NCTTFC ALDP participation.

- No Change Immense Change
- 0 1 2 3 4 5 6 7 8 9 10

Is there anything else that you would like to share about your experience participating in the NCTTFC ALDP?