

Leadership Curriculum and Materials Used by High School Agricultural Science Teachers: A National Study of the Pre-*LifeKnowledge* Days

A. Christian Morgan
Nicholas E. Fuhrman
Diana L. King
Frank B. Flanders
University of Georgia
Rick D. Rudd, Professor
Virginia Tech University

Agricultural science programs have provided many opportunities for leadership education through classroom, supervised agricultural experience (SAE), and FFA Organization activities. Past studies have focused on leadership developed through activities such as career development events (CDE), SAE activities, FFA Organization conventions, and other intra-curricular activities; however, little research has focused on the type of leadership curriculum and materials used to teach leadership in agricultural science classrooms. This study used a qualitative survey to determine what leadership curriculum and materials were being used by agricultural science teachers to teach leadership prior to the release of the LifeKnowledge curriculum. To understand the impact of LifeKnowledge in follow-up studies, a baseline must first be established for comparison. This study found that agricultural science instructors used a wide variety of curriculum and resources to teach leadership. The most popular resources being used were text books and state provided curriculum materials; however, no single curriculum was used by the majority of participants. Some participants indicated using curriculum and resources to teach leadership which contained little, if any, leadership content. Agricultural science instructors may have mixed views on the definition of the term “leadership,” therefore additional research is needed to determine how agricultural science instructors define leadership and the methods they use to build leadership skills in their students.

Keywords: leadership curriculum, secondary agricultural education, LifeKnowledge

Leadership skills are not only desired by employers, but needed for a productive and “functional” society (Brooks et al., 2008; Gardner, 1990; Kouzes & Posner, 2007). To help meet this need, leadership has been taught in high schools through a variety of venues, including leadership courses, career and technical student organizations, student councils, and other school-based organizations. Within career and technical education, agricultural science courses have provided many opportunities for leadership education through classroom, supervised agricultural experience (SAE) projects, and FFA Organization activities. While studies have sought to determine

leadership abilities attributed to involvement in SAE and FFA Organization activities, little has been done to assess what leadership education is occurring in the agricultural science classroom. In 2004, the National FFA Organization sought to improve the leadership instruction within agricultural education by developing the *LifeKnowledge* curriculum (LifeKnowledge, 2011). However, before the impact of *LifeKnowledge* can be assessed, a baseline must first be established for comparison. This study sought to capture data on the leadership materials being used by agricultural science instructors prior to 2004. With knowledge of the curriculum materials being used to teach

leadership in agricultural education classrooms prior to *LifeKnowledge*, it will be possible for future research to accurately assess the impacts of *LifeKnowledge*.

Leadership development is becoming a focus of many public schools across the country, and in a few cases schools and school districts have designed and implemented curriculum in order to teach leadership knowledge and skills to youth (Commonwealth of Virginia Board of Education, 2001; School District of Washington, 2001; University of Texas of the Permian Basin, 2009; Virginia Division of Policy and Public Affairs, 2001; Vital, 2007). Prior to this trend, Gardner (1990) documented that leaders are needed in all levels of our society, while Figura (1999) warned of an impending leadership void among the workforce. Indeed, students who have been taught leadership are better prepared to act in a leadership capacity because they better understand the phenomena of leadership as a personal and attainable undertaking (Ricketts & Rudd, 2002). If a goal of high school education is to produce capable citizen leaders, it is natural that leadership should be part of the curriculum.

Leadership Development in High Schools

Public secondary schools have a history of providing programs for leadership development. In addition to student councils, debate clubs, and other on-campus organizations, many high school career and technical programs develop leadership skills in students through a variety of activities such as the National FFA Organization, Family, Career and Community Leaders of America (FCCLA), Distributive Education Clubs of America (DECA), and SkillsUSA (White, 1982). Specific to agricultural science programs, the National FFA Organization has worked hand-in-hand with agricultural science teachers, providing an avenue for young people to exercise and develop their leadership skills (National FFA Organization, 2011). The FFA mission statement asserts the goal of the organization is to "...make a positive difference in the lives of students by developing their potential for premier leadership, personal growth, and career

success through agricultural education" (National FFA Organization, 2011, para. 1).

There is a unique link between high school agricultural science programs and the intra-curricular National FFA Organization. Within these classrooms, agricultural science instructors teach leadership skills to students, who then apply that knowledge by engaging in leadership activities provided through local, district, state, and national activities (Hughes & Barrick, 1993). Agricultural science programs provide a wide variety of opportunities for leadership development during classroom instruction, SAEs, and FFA activities (Hillison & Bryant, 2001; Hoover, Scholl, Dunigan, & Mamontova, 2007) which, according to the Agricultural Education Program Model, is integral to preparing students for further education and employment (Hughes & Barrick, 1993). However, little is known about the curriculum and materials being used in the high school classroom to teach leadership.

Student FFA Involvement

A substantial amount of research has been conducted to analyze the impact of FFA involvement on students over the past three decades. Townsend and Carter (1983) found student self-perceived leadership competencies had a significant correlation with FFA participation, and their results suggest leadership is enhanced with increased FFA activity. In addition, Ricketts and Newcomb (1984) surveyed high school students and discovered that students enrolled in agricultural courses and who were FFA members possessed significantly more leadership and personal development abilities than did students not enrolled in agricultural courses.

The relationship between FFA involvement and leadership development is strong. Ricketts and Newcomb (1984) and later Wingenbach (1995) found member engagement within the local FFA chapter had a significant positive relationship with self-perceived youth leadership and life skill development. Likewise Rutherford, Townsend, Briers, Cummins, and Conrad (2002) surveyed FFA chapter officers attending the National FFA Organization's Washington Leadership Conference (WLC) and

found a significant positive relationship between self-perceived leadership skills and level of FFA involvement. This positive correlation reinforces the positive relationship between FFA activity and perceived leadership skills. Similarly, a three-year longitudinal study revealed that the WLC had a positive impact on student attendees (Stedman, Rutherford, Rosser, & Elbert, 2009). Further, Anderson and Kim (2009) found that students preferred the school-based leadership training found in FFA and agricultural science classes second only to high school sports.

The preceding studies help to illustrate the benefits of youth involvement in extra-curricular and intra-curricular activities, especially in the development of leadership skills. However, not all students engage in these activities. The conceptual model used in this study was Finch and Crunkilton's (1999) Program System Model (Figure 1) which illustrates how students (*input*) enter a secondary program (*process*), and then graduate from this program (*output*). The secondary program consists of four elements: faculty, resources, curriculum, and intra-curricular activities. Within agricultural science programs, the presentation of leadership concepts and the development of leadership skills rely heavily on these four elements; yet, if

students are not participating in extra- and intra-curricular activities, classroom leadership instruction will be the process by which they develop leadership skills. Specific classroom instruction in leadership would provide leadership exposure for all students, regardless of participation in leadership activities, and aid in developing suitable levels of leadership skills in high school students (Carter & Spotanski, 1989; Ricketts & Rudd, 2001). This study sought to expand the understanding of the *process* component of the Finch and Crunkilton (1999) model prior to the release of the *LifeKnowledge* curriculum.

There are leadership textbooks designed for use in agriscience programs (Cengage, 2011; Pearson, 2011), and some states have developed leadership curriculum (Commonwealth of Virginia Board of Education, 2001; Instructional Materials Service, 2011; North Carolina State University, 2011; Virginia Division of Policy and Public Affairs, 2001) to address local needs. Although agricultural education has accepted the charge to teach leadership skills, no studies have been conducted to determine what curriculum has been used in agricultural science classrooms prior to the release of the *LifeKnowledge* curriculum.

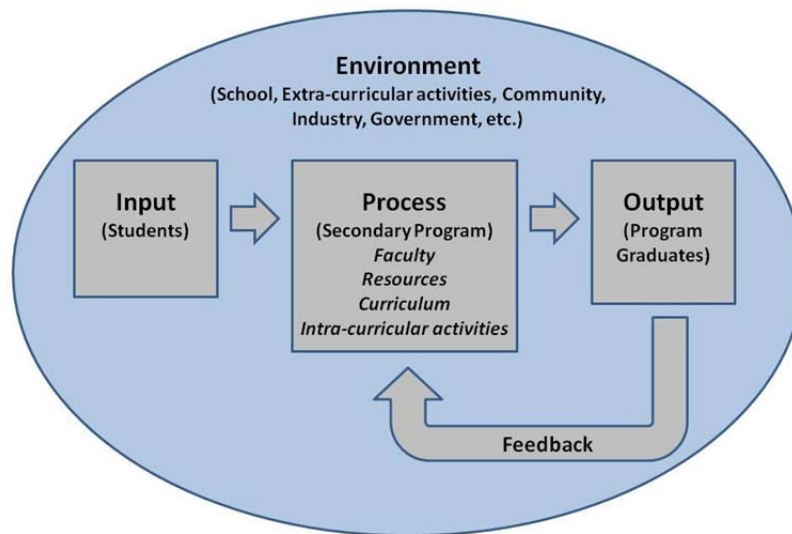


Figure 1. Program System Model. From Finch and Crunkilton, 1999, *Curriculum development in vocational education and technical education: Planning, content, and implementation* (p. 27), Boston: Allyn and Bacon.

A Leadership Curriculum for Youth

With no nationally accepted agricultural leadership curriculum available prior to *LifeKnowledge*, what materials were instructors using to teach leadership in agriscience programs? Although high school agricultural science instructors have the skills to develop their own curriculum materials, they prefer to use pre-existing materials (Wingenbach & Gartin, 2000), and the use of a quality curriculum provides a strong foundation for quality teaching to occur (Swan, 1996). Boccia (1997) points out “there is a meager base of programmatic guidelines for successful student leadership in schools” (p. 76). Though some teaching materials are available, it appears there is a need for a comprehensive leadership curriculum for youth.

Research has been conducted to determine the impact of intra-curricular activities on youth leadership development (Rutherford, Townsend, Briers, Cummins, & Conrad, 2002; Seevers & Dormody, 1995; Townsend & Carter, 1983; Wingenbach, 1995) and the amount of leadership being taught in agricultural science classrooms (Morgan & Rudd, 2006). However, little research has been done to determine the curriculum materials used to teach leadership in high school agricultural science classrooms. Although many have speculated on the positive impact of the National FFA’s *LifeKnowledge* curriculum in the high school agricultural science classroom, to assess such impact one must first determine the leadership curriculum used prior to its adoption.

Purpose and Objectives

As Part One of a two-part study, the purpose of this study was to determine the types of curriculum being used by agricultural science instructors to teach leadership prior to the adoption of the *LifeKnowledge* curriculum. A follow-up study will then be conducted to determine current use of the *LifeKnowledge* curriculum and to measure trends in curriculum use pre- and post-*LifeKnowledge*. Specifically, the objectives of this study were to determine if:

1. Instructor-developed curriculum were being used for leadership instruction prior to the adoption of the *LifeKnowledge* curriculum;
2. Commercially available curriculum were being used for leadership instruction prior to the adoption of the *LifeKnowledge* curriculum; and if
3. Commercially available text books were being used for leadership instruction prior to the adoption of the *LifeKnowledge* curriculum.
4. Determine the intensity with which each resource incorporated leadership concepts.

Methods

This study was conducted using survey research and was part of a larger study. The National FFA Organization was utilized as the source of participant contact information. The population for this study was high school FFA chapter advisors at agricultural science programs during the time of data collection; the 2003-2004 school year. It is required that the FFA advisor be the agricultural education teacher, so this population could also be termed all high school agricultural education teachers during the 2003-2004 school year (FFA Constitution, art XI, § B). At the time of this study, there were 7,193 FFA chapters throughout the nation (National FFA Organization, 2002). To achieve a 95% confidence level with 5% sampling error, a sample size of 367 was needed (Dillman, 2000). To account for inactive programs, incorrect addresses, and other potential coverage error issues, a sample size of 400 was used. A list of FFA chapters was provided by the National FFA Organization for this study, and the sample was selected using simple random selection (Agresti & Finlay, 1997). FFA advisors in five states (Kansas, Maine, Nebraska, New Jersey, and Pennsylvania) where the *LifeKnowledge* curriculum had been pilot tested were not included in this sample to eliminate potential influence of the *LifeKnowledge* curriculum on

the attempt to establish baseline data prior to *LifeKnowledge* becoming commonly used.

Participants were asked, "What leadership curriculum or text book are you currently using to teach leadership?" Responses to this question were sorted and grouped using the constant comparative method (Lincoln & Guba, 1985). Domain analysis was used to analyze all qualitative data following the strategies outlined by Spradley (1980). An expert panel of curriculum and leadership specialists with over 47 years of combined experience developing and evaluating agricultural education curricula grouped the leadership curriculum materials and related text books by common theme (domain). The expert panel then further categorized the types of leadership resources being used based on the intensity with which each resource incorporated leadership concepts. A scoring rubric was used which assessed intensity based upon number of leadership standards addressed from the National Agriculture, Food, and Natural Resources (AFNR) Career Cluster Content Standards (National Council for Agricultural Education, 2009), hours of instruction and activities, and level of lesson objectives according to Bloom's Taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Experts categorized each resource along a four-point scale: 1 (*unknown incorporation of leadership concepts*), 2 (*minimal/limited incorporation*), 3 (*moderate incorporation*), and 4 (*broad/thorough incorporation*). Copies of curriculum materials were procured for evaluation; materials from individual state curriculum offices were unable to be procured, therefore, for the purpose of this study, all state provided curricula were assumed to be governed by state standards which would include leadership concepts comparable to those in the AFNR Content Standards.

Data collection followed a modified version of the Tailored Design Method (Dillman, 2000) which employed bimodal data collection to reduce cost (Brashears, Akers, & Bullock, 2003). Participants were mailed a pre-notice letter notifying them that they had been selected to participate in this study, and instructions were provided within the letter explaining how they

could access the survey instrument from the Internet. Four days later a paper instrument was mailed to the participants who had not already responded to the internet survey. A thank you/reminder postcard was mailed ten days later. A second survey instrument was mailed ten days following that to participants who had not yet responded. Eight days later phone calls were made to participants who had still not responded. An additional ten days were allowed for the collection of electronic and mailed responses. The final response rate was 41.8% ($n = 167$).

Findings

Of the 167 participants, 108 responded to the open-ended curriculum question, with 20 stating that no curriculum resources were used ("none"), 54 used only one curriculum resource, and 34 used two or more curriculum resources. Participant responses that included multiple curriculum resources were separated and each resource was listed in an appropriate domain/category. Table 1 summarizes the overarching domains and the frequency with which they appeared in the raw data.

The text *Leadership, Personal Development, and Career Success* from Cengage was the most popular resource. The second most popular material was curriculum provided through state curriculum offices ($n = 25$). Within this group, 11 participants used curriculum from the Instructional Materials Service (IMS) in Texas, four participants used materials from the Instructional Materials Lab (IML) in Missouri, two participants used materials from the Curriculum and Instructional Materials Center (CIMC) in Oklahoma, and eight participants stated they used materials from other states. Eighteen participants used the *Official FFA Manual* or *Official FFA Student Handbook* to teach leadership. In addition, 15 participants developed their own curriculum materials. These materials included "handouts," "just notes," "personal experience," "articles," "state FFA officer materials," "Washington Leadership Conference materials," and "various resources from college text books and Internet sources."

Table 1
Leadership Curriculum Materials Used by Agricultural Science Instructors (n = 88)

Curriculum Material Used (domain)	n
Text: <i>Leadership, Personal Development, and Career Success</i>	27
State provided curriculum	25
<i>Official FFA Manual</i> or <i>Official FFA Student Handbook</i>	18
Instructor developed materials	15
Parliamentary procedure materials	12
Agricultural science textbooks	9
Miscellaneous leadership books	9
Text: <i>Developing Leadership and Personal Skills</i>	3

Note: Responses do not add up to 88 because some participants used more than one curriculum resource.

Parliamentary procedure materials were used by 12 participants as leadership curriculum. Nine participants used other agricultural science text books, with the most popular being *Agriscience: Fundamentals and Applications* by Cengage. A variety of miscellaneous books and materials were used by nine of the participants to teach leadership. These materials included Ziglar's *I Can* curriculum, CEV multimedia videos, *Success in the World of Work* software, *Character First*, *How to Win Friends and Influence People*, *The 7 Habits of Highly Effective People*, *The Leadership Challenge*, *Developing the Leader within You*, and John Deere business curriculum. Three of the respondents stated they used the Pearson text *Developing Leadership and Personal Skills* to teach leadership.

Eleven participants stated that leadership was not taught in a specific course, but was taught throughout many courses within the agricultural science curriculum. Within this domain, responses included the following:

- "Indiana has 11 approved agricultural courses. Leadership is not one of them. It is taught throughout all 11 courses."
- "Leadership is not formally taught from a text book. Rather, leadership, goal setting, and responsibility are taught as part of the science curriculum. Each student is given an agenda book in the

beginning of the year. Lessons are given on goal setting, time management, and prioritizing, with assessment being part of the agenda book grade."

- "We teach agriculture leadership everyday in our agriculture program. We were able to get 70% of our students to get involved in an after school activity to show their leadership. We just received a new book to use on leadership; however, I do not use a book at this time. I teach them from my own values."
- "No text is used – other than the *Official FFA Manual*. Leadership skills and curriculum are included in, or should be included in, every course we teach!"
- "I teach leadership development in all my courses. We spend a couple of weeks intensely and then it is integrated throughout the year. I use several resources: My personal experience as a past state officer. I also use [Cengage's] Leadership book, but I also refer to several resources I have acquired from different seminars I have attended."
- "Integrated into a unit within each course taught; *FFA Student Handbook*, parliamentary procedure workbook; and *Bits and Pieces*."
- "I currently do some leadership activities with my 7th and 8th graders in their FFA unit - I do a leadership and

conflict resolution unit with my freshman – Also, talk about leadership with my seniors in advanced ag and with all agribusiness/entrepreneurship class members.”

The expert panel of curriculum and leadership specialists further categorized participant responses based on the intensity with which each curriculum resource incorporated leadership concepts recommended by National Agriculture, Food, and Natural Resources Career Cluster Content Standards (National Council for Agricultural Education, 2009). Modal responses from the panel of experts are presented, using the previously identified curriculum resource domains, in Table 2.

A comparison of Tables 1 and 2 reveals that two of the five most often used curriculum materials by agricultural science instructors to teach leadership prior to the adoption of the

LifeKnowledge curriculum had minimal/limited incorporation of leadership concepts. Half of the curriculum materials being used to teach leadership prior to *LifeKnowledge* had broad/thorough incorporation of leadership theory and principles. The researchers were able to review copies of leadership texts mentioned and also state provided curricula from multiple states represented in the study. These state curricula were found to be based upon state standards which included personal leadership development in each case. Instructor developed materials could not be evaluated and, although they may be of excellent quality due to the curriculum training most teachers receive during pre-service activities, were classified as unknown because the level of leadership concepts could not be determined. In addition, it is unknown how each agricultural science instructor interpreted the term leadership or if their interpretation was accurate.

Table 2
Level of Incorporation of Leadership Concepts in Curriculum Materials Used by Agricultural Science Instructors

Curriculum Material Used (domain)	Level of Incorporation of Leadership Concepts			
	Unknown	Minimal or Limited	Moderate	Broad or Thorough
Text: <i>Leadership, Personal Development, and Career Success</i>				X
State provided curriculum				X
<i>Official FFA Manual or Official FFA Student Handbook</i>		X		
Instructor developed	X			
Parliamentary procedure materials		X		
Agricultural science textbooks		X		
Miscellaneous leadership books				X
Text: <i>Developing Leadership and Personal Skills</i>				X

Conclusions / Recommendations / Implications

It is apparent from this study that a wide variety of materials were being used to teach leadership in agricultural science classrooms prior to the adoption of the *LifeKnowledge* curriculum. While the textbook *Leadership, Personal Development, and Career Success* was the most popular material being used by respondents in this study, there was not a curriculum material or text being used by the majority of instructors. Similarly, state curriculums were popular, but were also not used by a majority of instructors.

Participants exhibited a variety of practices when incorporating leadership curriculum into their agriscience programs. Some instructors focused on the *Official FFA Manual* as their source for leadership knowledge, while others focused on parliamentary procedure manuals. Still others used materials available from popular sources, and some instructors relied on personal experiences for teaching leadership. While each of these curriculum materials has their strengths, it is evident that there was a lack of consistency in what leadership knowledge base was being used for leadership instruction prior to *LifeKnowledge*. With the variety and variability of options being used, the amount of exposure to leadership education within an agriscience classroom is difficult to gauge. Some instructors view leadership through the lens of Kouzes and Posner's *The Leadership Challenge*, which is widely used and rooted in leadership research (Kouzes & Posner, 2007), while others view it through the lens of a general agriscience textbook, which may contain only an overview of FFA and a few pages on interpersonal skills.

This study revealed two primary observations. First, there is a need for a common definition of leadership that all agricultural science instructors can share. Just as agricultural science instructors have a

common definition for animal science or horticulture, there should be an accepted definition for leadership. Second, there is a need for appropriate curriculum that all agricultural science instructors can access to use as a foundation for leadership instruction. Simonsen and Birkenholz (2008) also recommended that core leadership content topics be identified and taught nationally in secondary agricultural education programs. Since the time this study was conducted, the National FFA Organization has helped to address both of these observations with the *LifeKnowledge* curriculum. A "standardized" definition of leadership and nationally accepted leadership curriculum would not only add to the *process* component of the Finch and Crunkilton (1999) model, but would aid in the evaluation of student leadership knowledge nationally.

A follow-up study should be conducted to determine current use of the *LifeKnowledge* curriculum and to measure trends in curriculum use pre- and post-*LifeKnowledge*. The results of this study should be helpful in determining the impact of the *LifeKnowledge* curriculum now that baseline data prior to its release are available. Research should be conducted to determine how agricultural science instructors define leadership and whether the *LifeKnowledge* curriculum has replaced curriculum materials found in this study, been added to materials already in use, or not been adopted. In addition, research should determine if development of *LifeKnowledge* has resulted in more leadership education incorporated into agriscience classes, more stand-alone leadership courses offered, or had no effect on the amount of leadership education included in agriscience programs. Perceptions of students, teachers, and administrators should be assessed to determine if changes have occurred in the perception of agricultural education as a source of leadership development.

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A. CHRISTIAN MORGAN is an Assistant Professor in the Department of Agricultural Leadership, Education, and Communication at the University of Georgia, 130 Four Towers, Athens, GA 30602, acm@uga.edu.

NICHOLAS E. FUHRMAN is an Assistant Professor and Extension Specialist in the Department of Agricultural Leadership, Education, and Communication at the University of Georgia, 139 Four Towers, Athens, GA 30602, fuhrman@uga.edu.

DIANA L. KING is an Assistant Professor in the Department of Agricultural Leadership, Education, and Communication at the University of Georgia, 2360 Rainwater Rd., Tifton, GA 31793, dlking@uga.edu.

FRANK B. FLANDERS is an Assistant Professor in the Department of Agricultural Leadership, Education, and Communication at the University of Georgia, 132 Four Towers, Athens, GA 30602, flanders@uga.edu.

RICK D. RUDD is a Professor and Head of the Department of Agricultural and Extension Education at Virginia Tech University, 2270 Litton Reaves Hall, Blacksburg, VA 24061, rdudd@vt.edu.