

# ACHIEVEMENT, AFFILIATION AND POWER NEEDS OF GEORGIA'S MIDDLE GRADE AGRICULTURAL EDUCATION STUDENTS

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## Abstract

*The purpose of this study was to examine the motivational needs of middle grade (grade 7-8) students who enroll in Agricultural Education classes in Georgia. McClelland's motivational needs theory served as the framework for the study. The data determined that agricultural students had a higher need for achievement than for affiliating or power and that no differences existed between FFA members and non FFA members. The study also determined that female agricultural education students had a higher need for affiliation and power than male students. No differences were found in the need for achievement, affiliation or power when students were grouped by grade or geographic location. African-American students had a higher need for achievement and power than students in all other ethnic categories.*

## Introduction

The FFA program has been an integral component of agricultural education aimed at motivating students to learn a variety of different skills at all levels of learning (Phipps & Osborne, 1988). Studies by Dormody and SeEVERS (1994) suggested that students should be encouraged to join FFA and develop a supervised agricultural experience program (SAEP), regardless of self-esteem, age, ethnicity, place of residence or years in FFA.

When FFA was established, it was designed to involve students in high school Agricultural Education programs. At the 1988 National FFA Convention, a constitutional amendment passed officially allowing middle grade student membership

into the FFA organization (Rossetti, Padill & McCaslin, 1992). This change also brought about a different focus for FFA programs for these middle grade students. Programs for middle grade FFA members offer students the opportunity to start developing self-discipline, organizational and leadership skills, competitive spirit and regard for teamwork (National FFA Organization, 1998, p. 43). All three components of the high school Agricultural Education Program are included in the middle grade program however; they have been altered to focus on the exploration of the agricultural industry. Middle Grade Agricultural Education and FFA offer students the opportunity to explore and stimulate interest in the careers and issues in agriculture while providing students with an opportunity to be a part of

something larger than themselves (National FFA Organization, 1998). According to Flanders (1998) middle grade teachers and administrators emphasize that when compared to high school students, middle grade students need more hands-on activities and more teamwork than individual tasks. Middle grade FFA activities include competitive team events and team projects to provide opportunities to learn leadership and personally develop.

Even though Agricultural Education has tailored the high school program to the developmental stage of middle grade students, only ten percent of Georgia students are involved in the FFA component of the program. While a number of studies (Connors, Moore & Elliot, 1990; Dormody & Seevers, 1994; Hoover & Scanlon, 1991; Luft & Glere, 1991; Marshall, Herring & Briers, 1992; Talbert & Larke, 1993) have been found on the subject of motivation from educators' perspectives few (Turner, 1996) have addressed motivational needs as perceived by students and none have focused on the perceived motivational needs of middle grade Agricultural Education students.

### **Theoretical Framework**

This study utilized the motivation theory developed by McClelland (1962). McClelland developed a meaning for motivation and a model of motivation. McClelland stated that intrinsic motivators are critical to meeting a person's needs, because they describe a pattern of how an individual may behave. McClelland's theory of motivation depicts three types of motivational needs: The need for achievement, the need for affiliation and the need for power. People have either one of

these needs or a combination of these three needs which motivate them toward a certain pattern of behavior (McClelland, 1962). Based on McClelland's theory, individuals with a high need for achievement like situations in which they take personal responsibility for finding solutions to problems. They set moderate achievement goals and take calculated risks. People with a high need for achievement strive to make things better. They are more willing to compete with a personal standard of excellence as a guideline to evaluate performance.

Students with a high need for achievement do not like work that is too easy or too hard (McClelland, 1987). If tasks are too easy, there is no Areal@ improvement. If tasks are too hard, then by not completing the task, no improvement was accomplished either.

Individuals with a high need for affiliation tend to think often about the quality of their relationships (McClelland, 1987). These individuals cherish the positive experiences while worrying about any shortcomings in a relationship. Persons with a high need for affiliation will seek the companionship of others and take steps to be liked by them, as well as wanting to project a favorable image. These individuals will tend to be the peacemakers, smoothing out disagreements and often choosing to work and make decisions collectively in a group. Individuals with a high need for power are control and influence oriented (McClelland, 1987). These individuals spend more time thinking about how to obtain and exercise power and authority. Persons with a high need for power need to win arguments, persuade others, to prevail, and to obtain positions where they can exert influence (McClelland & Steele, 1973). McClelland

(1987) suggested that there are two aspects of power. The first is a negative one that is concerned with having one's way by controlling and dominating others. The second is social or institutional, one that emphasized the skills of persuasion and inspiration to help people achieve, attain happiness, and learn. These individuals help people form and attain goals while not dominating them.

Behavior may be predicted if all motivator needs can be identified. By exploring these needs, educators can determine what motivates their students to enroll and participate in agricultural classes and the FFA. An important part of participating in an activity for any student is that the student is responsible for choosing the activity in which he/she would like to participate such as those provided through FFA (Carter & Neason, 1984).

A variety of factors may motivate young people to affiliate with a group such as agricultural education and the FFA. Turner (1996) studied the motivational needs of high school students enrolled in agricultural education programs in Georgia. Turner found that high school students were motivated by the need for achievement, and that FFA members had a greater need for achievement, affiliation and power than non-FFA members. Turner also found that females had a higher need for affiliation and power than males, and that African-American students had a higher need for achievement and power, while Caucasians had a higher need for affiliation. He also found that freshmen had a lower need for power than students in upper grades and that students living on a farm and in a rural setting had a higher need for power than students living in an urban setting. To better understand these reasons, agricultural

educators need to know the motivational need structure of their students. The information from this study should aid educators in recruiting students and in developing programs that will help retain students.

### **Purpose of the Study**

The overall purpose of the study was to examine motivational needs of middle grade (grade 7 - 8) students who enroll in agriculture classes. The research questions for this study were:

1. What are the motivational needs of middle grade students enrolled in agriculture programs in Georgia?
2. Are there differences in the need for achievement, need for affiliation, and/or the need for power among middle grade students enrolled in agriculture programs in Georgia based on membership/non-membership in the FFA?
3. Are there differences in the need for achievement, need for affiliation, and the need for power of middle grade students enrolled in agriculture programs in Georgia when grouped by: gender, grade level, geographic location, and ethnicity?

### **Methodology**

The population for this study was all seventh and eighth grade agricultural education students in Georgia for the 1998-1999 school year. Middle grade FFA membership above the local level is available only to seventh and eighth grade students; therefore, sixth grade students were not included in the study. The population size,

14,115, in 38 schools was determined utilizing enrollment figures provided by the local agricultural education instructor to the Department of Education. These figures were available in the Agricultural Education office at the Georgia Department of Education in Atlanta, Georgia. The presence of the FFA component was critical to the findings of this study. The FFA organization is one of the three components of the Agricultural Education Program, however not every local middle school system offers a complete program with all three components. Therefore, the Georgia FFA Membership rosters from the Georgia FFA Association office were utilized to determine the number of Georgia Middle Grade Agricultural Education Programs with an active Middle Grade FFA Chapter for the 1998-1999 school year; the number of chapters was 19 with 7420 students.

Due to the size of the population, a census was deemed impractical. Therefore, random sampling with the use of inferential statistics was utilized. Cluster random sampling was used because pure random sampling was impractical due to logistics, time and money constraints. Borg and Gall (1987) define cluster random sampling as the use of naturally occurring groups of individuals within the population rather than individuals. The local agricultural program was the most naturally occurring group within the population, therefore, the Middle Grade Agricultural Education Program was utilized as the cluster.

Utilizing a sample size table, the target sample size was determined in proportion to the population which the sample would represent. The target sample size of 370 seventh and eighth grade students was surpassed by randomly selecting eight middle grade agricultural education

programs as the cluster sample. The distribution of Middle Grade Agricultural Education programs with FFA chapters in Georgia is not equal. There are three FFA Association Regions in Georgia. More than half of the middle grade programs are located in Georgia FFA Association's South Region and only two programs with chapters are located in the Georgia FFA Association's Central Region. However, the random sampling of eight programs from the nineteen yielded representation comparable to the distribution of programs throughout the state. The sample includes two schools from the North Region, one school from the Central Region and five schools from the South Region. This sampling yielded 445 seventh and eighth grade agricultural education students to participate in the study.

#### Instrument

To collect data for the study an instrument developed by Turner (1996) was utilized. Only slight modifications to some demographic items were made. The instrument was divided into two parts. The first part was designed to determine the motivational needs of Middle Grade Agricultural Education students in Georgia. The response items followed McClelland's (1962) motivational theory with five of the fifteen items correlating to each of the three areas in the motivational theory; the need for achievement, the need for affiliation and the need for power. A five point scale (1 = strongly disagree; 5 = strongly agree) was used with each response item. The second part of the instrument contained five multiple-choice items to gather demographic information from the participants.

The validity of the instrument was established through its use in Turner's (1996)

study. In the construction of the instrument, Turner reviewed and edited the instrument with University of Georgia faculty; pilot tested the instrument with thirty students and utilized the instrument in the research study involving 1,952 students (Turner 1996). For this study the researcher reviewed and edited the instrument with University of Georgia faculty and Georgia Middle Grade agricultural instructors. The reliability of the instrument was established by Turner utilizing the responses from the pilot study. Cronbach's alpha was used to measure the internal consistency reliability. The alpha for the five items that measured the need for achievement was .89 and the alpha for the five items that measured the need for affiliation was .76. The alpha for the five items that measured the need for power was .81 (Turner 1996, p32). For this study the alpha for the items measuring achievement, affiliation and power was .60, .66 and .64 respectively. While these levels were lower than expected, Nunally (1975) recognized .60 or above to be an acceptable alpha level.

### Data Collection

The data collection process began by first mailing a participation request letter to the agricultural instructor of the eight randomly selected programs. The letter was addressed to the teacher identified as the FFA advisor on the chapter FFA Membership roster. The letter explained the purpose of the study, explained the procedure of the study and asked the instructor for participation from their program. The instructor signified their intentions of participating in the study by completing an enclosed participation response form. The participation response form asked the instructor to write the school

name and name of the instructor, check the box if they were willing to participate, write the total number of seventh and eighth grade students currently in agricultural education classes and sign their name. The participation request letter also included the principal approval request letter as an enclosure. This authorization form explained the purpose of the study, explained the procedure for the study and asked for the administrator to yield permission for the survey research to be conducted within the school system. Included in the mailing was a stamped, return envelope for the completed response form and approval letter.

The researcher contacted non-respondents with a phone call. If the instructor agreed to participate in the study, the researcher asked the instructor to forward the required participation response form and principal approval letter so that survey materials could be mailed to the program. All eight middle grade programs agreed to participate in the study.

The researcher mailed survey packets to each program as soon as the authorization forms were received. Each survey packet contained a cover letter, parental consent form, instruction sheet and the script for the teacher and a copy of the instrument for each student. Each instructor received a stamped envelope for the return of completed surveys and consent forms.

Follow up phone calls were made two weeks later to retrieve packets not yet received. All eight programs returned the completed surveys and consent forms for a return rate of one hundred percent. These eight clusters yielded a total of 445 survey responses.

All surveys were examined by the researcher for completeness. Data were then coded for efficient and accurate statistical

analyses. The researcher entered the data into a database using the Statistical Analysis System (SAS, 1995).

### Data Analysis

Research question one was primarily analyzed using means and standard deviations. An Analysis of Variance (ANOVA) Repeated Measures Design and the Duncan Multiple Range Test were also utilized to determine statistically significant differences in the need for achievement, the need for affiliation, and the need for power among the middle grade agricultural students.

Research objective two was analyzed utilizing a series of t-tests to determine statistically significant differences in the need for achievement, the need for affiliation, and the need for power between FFA and non-FFA member agricultural students.

Research objective three was analyzed by computing a series of Analysis of Variance (ANOVA) and Duncan Multiple Range Tests to determine statistically significant differences in the need for achievement, the need for affiliation, and the need for power among agricultural students when grouped by gender, geographic

location, ethnicity, and grade level. Acceptance level was set at alpha level .05 for the study.

### **Findings**

#### Objective 1: Motivational Need of Students

Research objective one sought to determine the motivational needs of students enrolled in middle grade agricultural education programs in Georgia. Part one of the instrument contained fifteen items that examined the need for achievement, the need for affiliation and the need for power. These fifteen items were analyzed utilizing an Analysis of Variance (ANOVA). The results of the ANOVA revealed statistically significant differences among the variables, therefore, the Duncan Multiple Range Test was utilized to compare group mean scores. These data are presented in Table 1.

Table 1 shows the motivational needs of all middle grade agricultural education students in the study. The need for achievement displayed the highest mean ( $\underline{M} = 3.97$ ), followed by the need for affiliation ( $\underline{M} = 3.63$ ), and the need for power ( $\underline{M} = 3.33$ ).

Table 1. Means, Standard Deviations and Analysis of Variance Repeated Measures Design for Agricultural Education Students and the Need for Achievement, Affiliation and Power (N = 445)

Source	<u>M</u>	<u>SD</u>	<u>df</u>	F	p>F	Duncan*
Agricultural Education Students			2	102.21	.0001	1>2>3
Motivational Needs			1332			
Achievement (1)	3.97	.653				
Affiliation (2)	3.63	.615				
Power (3)	3.33	.750				
Control Total			1334			

\*Note. 1 = Need for Achievement, 2 = Need for Affiliation and 3 = Need for Power

Objective 2: Difference in Motivational Needs Between FFA and Non-FFA Members

Research question two sought to describe the differences in the need for achievement, the need for affiliation and the need for power among students enrolled in middle grade agricultural education programs in Georgia based on membership/non-membership in the FFA. The fifteen instrument items that examined

the need for achievement, the need for affiliation and the need for power along with the demographic variable of FFA membership/non-membership were analyzed with a series of t-tests (Table 2). Results indicate no significant differences in need for achievement, need for affiliation, and need for power based on FFA membership and non-membership.

Table 2. T-test for Need for Achievement, Need for Affiliation and Need for Power of Agricultural Education Students Based on FFA Membership/Non-membership (N = 445)

FFA Membership	n	<u>M</u>	<u>SD</u>	t-value	p
<u>Achievement</u>					
Yes	101	3.94	.692	-0.611	.5419
No	344	3.98	.642		
<u>Affiliation</u>					
Yes	101	3.60	.622	-0.424	.6721
No	344	3.63	.613		
<u>Power</u>					
Yes	101	3.44	.738	1.771	.0784
No	344	3.29	.751		

Objective 3: Differences in Motivational Needs by Gender, Grade Level, Geographic Location, and Ethnicity.

Research question three sought to determine differences in the need for achievement, need for affiliation, and need for power for middle grade agricultural education students in Georgia when grouped by gender, grade level, geographic location and ethnicity. A series of t-tests was used to determine the differences based on gender, grade level and geographic location.

The first set of t-tests utilized gender

as the independent variable. Findings are presented in Table 3. The results indicated that there were no statistically significant differences in the need for achievement ( $p = .6445$ ) based on gender. Results did indicate statistically significant differences in the need for affiliation ( $p = .0006$ ) and the need for power ( $p = .0223$ ) based on gender. Female students displayed a higher need for affiliation ( $M = 3.74$ ) and need for power ( $M = 3.42$ ) than male students enrolled in middle grade agricultural education programs.

Table 3. T-test for Need for Achievement, Need for Affiliation and Need for Power of Agricultural Education Students Based on Gender (N = 445)

<u>Gender</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t-value</u>	<u>p</u>
<u>Achievement</u>					
Male	251	3.99	.646	.462	.6445
Female	194	3.96	.664		
<u>Affiliation</u>					
Male	251	3.54	.649	-3.468	.0006
Female	194	3.74	.548		
<u>Power</u>					
Male	251	3.26	.758	-2.293	.0223
Female	194	3.42	.730		

The second set of t-tests utilized grade level as the independent variable. Findings are presented in Table 4. The results indicated that there were no statistically significant differences in the need

for achievement ( $p = .1859$ ), the need for affiliation ( $p = .3424$ ) or the need for power ( $p = .5419$ ) based on grade level.

Table 4. T-test for Need for Achievement, Need for Affiliation and Need for Power of Agricultural Education Students Based on Grade Level (N = 445)

<u>Grade Level</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t-value</u>	<u>p</u>
<u>Achievement</u>					
Seventh	199	4.02	.613	1.325	.1859
Eighth	246	3.94	.683		
<u>Affiliation</u>					
Seventh	199	3.60	.635	-0.951	.3424
Eighth	246	3.65	.598		
<u>Power</u>					
Seventh	199	3.30	.765	-0.611	.5419
Eighth	246	3.35	.738		

The third set of analyses utilized geographic location as the independent variable. The responses to the demographic question were grouped into two categories: farm and non-farm. These categories were utilized to perform t-tests on the dependent variable of geographic location. Findings are presented

in Table 5. The results indicated that there were no statistically significant differences in the need for achievement ( $p = .9713$ ), the need for affiliation ( $p = .9577$ ) or, the need for power ( $p = .2748$ ) based on geographic location.

Table 5. T-test for Need for Achievement, Need for Affiliation and Need for Power of Agricultural Education Students Based on Geographic Location (N = 445)

Geographic Location	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t-value</u>	
<u>Achievement</u>					
Farm	61	3.97	.581	-0.036	.9713
Non-Farm	384	3.97	.665		
<u>Affiliation</u>					
Farm	61	3.62	.639	-0.056	.9577
Non-Farm	384	3.63	.611		
<u>Power</u>					
Farm	61	3.62	.733	1.099	.2748
Non-Farm	384	3.31	.752		

The fourth independent variable, ethnicity, was analyzed by utilizing the Duncan Multiple Range Test. Findings are presented in Table 6. The results indicated that there were no statistically significant differences in the need for affiliation ( $p = .6287$ ) based on ethnicity. The results indicate statistically significant differences in the need for achievement (.0001) and need for power (.0002). African-American

students had a higher need for achievement ( $M = 4.23$ ) than the Caucasian ( $M = 3.88$ ), Asian ( $M = 3.73$ ), Hispanic ( $M = 3.89$ ), and Native American ( $M = 3.28$ ) classified students. African-American students also had a significantly higher in the need for power ( $M=3.58$ ) than the Caucasian ( $M = 3.22$ ) classified students.

Table 6. Duncan Multiple Range Test on Mean Category Scores by Ethnicity\* (N = 445)

Category	<u>Mean Score by Ethnicity</u>			df	F	p
	I	II	III			
	Caucasia n n = 306	Other* * n = 15	African- American n = 124			
Achievement	3.88	3.65	4.23 <sup>a</sup>	2	15.5 5	.0001
Affiliation	3.60	3.80	3.67	2	1.16	.3153
Power	3.22	3.30	3.59 <sup>b</sup>	2	10.78	.0001

\*Differences between and among means are insignificant unless noted with a super script.

\*\*Asian, Hispanic, Native American <sup>a</sup>The mean scores for Category III were significantly higher for the need for Achievement than Categories I, II, and III.

<sup>b</sup>The mean scores for Category III were significantly higher for the need for Power than Category I.

### Conclusions

The conclusions for this study are based on the findings related to each of the research objectives.

1. As a whole, middle grade agricultural students had a higher need for achievement than need for affiliation. These students' need for affiliation was also significantly higher than their need for power. However, all of the mean responses were less than

4 (agree) which support that students were not strongly motivated by achievement, affiliation or power, as expressed by McClland.

2. There was no significant difference between middle grade agricultural students who join the FFA and those who don't join the FFA in terms of their need for achievement, need for affiliation or need for power. Thus FFA memberships may not be as important in meeting motivational needs as previously thought

- (Turner, 1996).
3. Female students had a higher need for affiliation and a higher need for power than male students. Consistent with Turner's (1996) study, females are more concerned with relationships and influence than are males. However, there was not a significant difference in the need for achievement between male and female students.
  4. Results indicated no significant differences in the need for achievement, the need for affiliation or the need for power of middle grade students when grouped by grade level. In contrast, Turner (1996) found that students in higher grades had a higher need for power than lower grade students.
  5. No differences in the need for achievement, the need for affiliation and the need for power between middle grade students living on a farm and students not living on a farm. Turner (1996) however, found students from rural settings to have a higher need for power than their urban counterparts.
  6. There were no significant differences in the need for affiliation when students were grouped by ethnicity. African-American students had a higher need for achievement and power than Caucasian other Ethnic group students. While the findings

from this study regarding African-American students are consistent with research by Turner (1996), he also found that Caucasians had a higher need for affiliation than other Ethnic groups.

The results from each of the three objectives yielded few statistically significant differences among student groupings. Differences among high school students (Turner, 1996) were more evident than the differences among middle grade students in this study. These results provide insight for possible teaching strategies for middle grade students. This lack of differences may indicate that during this developmental stage of adolescence, students' motivational needs are not yet clearly defined. To aid students in developing their motivational needs, exploratory teaching methods may be implemented. The developmental stage of adolescence is a period of self-discovery. Teaching methods should be developed to meet the current motivational needs of students, however, methods may also be utilized to aid students in self-discovery for continual personal development. Activities designed to allow students to experiment with personal development characteristics may assist them in developing the motivational needs which become more evident as the student matures.

### **Recommendations**

Based on the findings and conclusions of this study, the following

recommendations are offered:

1. Directors of Agricultural Education on the state and national level as well as local agricultural educators should review middle grade agricultural education programs to ensure they emphasize activities that appeal to middle grade students' need for achievement and need for affiliation. The need for power should not be overlooked since it is a higher need for female students. When compared to the high school program, the middle school program may require a greater emphasis on achievement and affiliation.
2. Few statistically significant differences were found throughout the sample, therefore, exploratory teaching methods should be utilized to assist students with personal characteristic development.
3. No significant differences were found between the motivational needs of FFA members and non-members, therefore, advisors may explore what motivates the members in an effort to find motivators of non-members.
4. Female middle grade students display a greater need for affiliation and need for power than their male counterparts. Encouraging and providing female students with group activities and leadership roles which allow them to influence outcomes and others may help to meet these needs. Instructors, however, should be aware that female students are motivated to participate in different ways than males.
5. Agricultural education programs are becoming more diverse. Agricultural educators must provide educational experiences to meet the achievement and power needs of African-American students. Providing African-American students leadership opportunities and educational experiences that empower and inspire them can help to meet these needs. Providing these opportunities and experiences can also facilitate their performance in a way that may motivate them to become more achievement oriented.
6. This study and the research by Turner (1996) were conducted in one state. These studies could be replicated in other states or regions to determine differences in motivational needs by geographic location or program. Further research could be conducted to determine how motivational needs change as students mature or how they might differ from students in other vocational programs.

## References

- Borg, W. & Fall, M. (1987). Educational research: An introduction (5<sup>th</sup> edition). New York.; Longman.
- Carter, R.I. & Neason, A.B. (1984, Fall). Participation in FFA and self-perceptions of personal development. The Journal of the American Association of Teacher Educators in Agriculture, 25 (3), 39-44.
- Cheek, J.F., Arrington, L.R., Carter, S., & Randell, R.S. (1994, June). Relationship of supervised agricultural experience program participation and student achievement in agricultural education. The Journal of Agricultural Education, 35 (2), 1-5.
- Connors, J., Moore, E., & Elliot, J. (1990). Factors influencing secondary Michigan agricultural students' decisions not to join the FFA. The 16<sup>th</sup> Annual Proceedings of the National Agricultural Education Research Meeting: Cincinnati, Ohio, 27, 19-26.
- Dormody, T.J. & Seevers, B.S. (1994, June) Predicting youth leadership life skills development among FFA members in Arizona, Colorado, and New Mexico. Journal of Agricultural Education, 35 (2), 65-71.
- Flanders, F. (1998). Middle school biotechnology in agricultural education. Georgia Atlanta, GA: Department of Education
- Hoover, T.S. & Scanlon, D.C. (1991, Fall). Recruitment practices: A national survey of agricultural educators. Journal of Agricultural Education, 32 (3), 29-34, b.
- Luft, V.D. & Geise, A.D. (1991, April, 17). Factors and persons influencing high school students to enroll in vocational agriculture programs. Research in Agriculture Education, Toward Century 21. Twelfth Annual Western Regional Research Meeting. Seattle, Washington. 10 (1), p. 110-120.
- Marshal, T, Herring, D, & Briers, G. (1991, Winter). Factors associated with enrollment in agricultural science and membership in the FFA in Texas. Journal of Agricultural Education, 33 (4), 17-23.
- McClelland, D.C. (1961). The Achieving Society. Princeton, NJ: Van Nostrand Press
- McClelland, D. C. & Steele, R.S. (1973). Human motivation a book of readings. Morristown, NJ: General Learning Press.
- McClelland, D.C. (1987). Human motivation. Cambridge, NY: Cambridge University Press.

National FFA Organization (1998). Official FFA Manual. Alexandria, Virginia.

Nunnally, J.C. (1975). Psychometric theory. New York, NY: McGraw Hill.

Phipps, L.J., & Osborne, E.W. (1988). Handbook on agricultural education in public schools. Daville, IL: Interstate.

Rossetti, R., Padill, D., & McCaslin, N.L. (1992). A nationwide examination of middle school enrollment in agricultural education and membership in the national FFA organization. Columbus, OH: The Ohio State University.

Talbert, B.A. & Larke, A. (1993).

Factors influencing minority and non-minority students to enroll in an introductory Agriscience course in Texas. Proceedings of the Annual Southern Regional Agricultural Education Research Meeting, Gatlinburg, Tennessee, 43. 139-146.

Turner, J.P. (1996). The motivational needs of students enrolled in agricultural education programs in Georgia. (Doctoral Dissertation, University of Georgia's 1996).

SAS.(1993). SAS Procedures Guide (version 6) (4<sup>th</sup> ed) Carey, NC: SAS Institute Inc.