

Characteristics and Experiences Related to the Leadership Skills of Agriculture Students in College

Billy G. McKinley, Graduate Student
Robert J. Birkenholz, Associate Professor
Bob R. Stewart, Professor
University of Missouri-Columbia

Much has been written in recent years regarding leadership. Decades of academic analysis have generated more than 350 definitions of leadership. Leaders were once thought to have been born, not made, summoned to their calling through some enlightening process. This belief was commonly called the "great man" theory (Bennis & Nanus, 1985). "Great man" theorists viewed power as having been vested in a limited number of people whose inheritance and destiny made them leaders. Those of the right heritage could lead and no amount of learning could change the fate of others.

Situational theorists explained leadership as an effect of a single force or set of forces. According to Murphy (1941), leadership did not reside in a person but was a function of the occasion. Situations called for a certain type of action; the leader did not inject leadership, but leadership was the instrumental factor through which a solution was achieved.

Recently, researchers have proposed theories of transformational leadership in which individuals become leaders through education and training. Leaders and administrative officials of the British Empire at its greatest height received from their public schools a general education in self-discipline, teamwork, and group loyalty which created an aura of command and habits of superiority with "a facade of crisp decisiveness" (Stogdill, 1959).

Numerous studies have been conducted to evaluate the results of leadership development programs, (Howell, 1974; Martin, 1977; Miller, 1976; Giebrink, 1975). Each of these researchers reported that the programs were successful in meeting their intended objectives, but there was a need to examine the relationship between participation in organizations and activities and the development of leadership qualities.

Several studies have suggested that educational attainment was a primary indicator of individual leadership ability. But questions of where and how educational experience contributed to leadership development remained unanswered. Understanding student leadership characteristics, student qualities, and the leadership development needs of College of Agriculture students was necessary to determine the need for leadership development programs that would benefit both the student, the college, and potential employers.

Effective leadership skills have been judged as necessary for success in the complex and rapidly changing agricultural industry. Most agricultural employers report a need for effective leaders to aid in meeting their goals and objectives. Increasingly, companies have sought college graduates to fill positions of leadership.

A problem facing agricultural organizations and commodity groups was that the pool of individuals who were able to provide effective leadership continued to decrease in size. A once large farm production population of 50 percent in the 1870's, has shrunk to

below three percent of the total U.S. population by 1990. Since fewer students have enrolled in agriculture, fewer leaders with an agricultural background were being developed.

Employers often required a college degree for persons to be employed in leadership positions. However, data were not available to document the leadership development of college students. In order to develop the leadership abilities of students it was important to examine their characteristics. Information was also needed about student experiences and characteristics which may have contributed to the development of their leadership abilities.

Purpose and Objectives

The primary purpose of this study was to assess the characteristics, experiences, and participation in organizations and activities which were related to the perceived leadership abilities of students enrolled in the University of Missouri-Columbia, College of Agriculture.

More specifically, the study attempted to answer the following research questions:

What are the perceived leadership abilities of junior and senior students enrolled in the College of Agriculture?

What is the relationship between selected student demographic characteristics and experiences and the perceived leadership abilities of students?

What is the relationship between participation in activities and organizations and the perceived leadership abilities of students?

Procedures

This study employed an *ex post facto* design as described by Campbell and Stanley (1966). The independent variables were selected demographic characteristics and the level of respondent participation in activities and organizations. Dependent variables were the self-perceived leadership abilities of the respondents. The leadership ability factor variables were identified as follows: Interpersonal Relations, Administration, Management of Self, and Communications.

The population for this study included all junior and senior students enrolled in the University of Missouri-Columbia, College of Agriculture during the Winter Semester of 1991. The population consisted of 856 students. According to Krejcie and Morgan (1970), a sample of 265 individuals was suggested to be representative of the population. The size of the sample was increased in order to facilitate the use of multivariate statistics and to compensate for nonrespondents. A random sample of 428 students was selected using a table of random numbers.

The questionnaire used in the study was a revised version of a survey instrument developed by Luft (1986). The instrument was designed to assess the leadership abilities of rural adults in North Dakota. Revisions were made in the original instrument by Schumacher (1990) who adapted the survey for college students.

The questionnaire consisted of three parts. Part One included 48 statements reflecting leadership characteristics. Respondents were asked to indicate their level of agreement with each of the 48 statements. Respondents were asked to use the following Likert-type response scale: 1 = strongly disagree; 2 = moderately disagree; 3 = slightly disagree; 4 = slightly agree; 5 = moderately agree; and 6 = strongly agree.

Part Two of the questionnaire requested respondents to identify organizations and activities that they had participated in during high school and college. Part Three requested respondents to provide information on selected demographic characteristics.

Instrument reliability was estimated following data collection using the Cronbach's Coefficient Alpha procedure. The perceived leadership scale yielded an overall coefficient alpha of 0.937.

Results

Responses were received from 234 (55%) individuals. Fourteen responses were not usable constituting a response rate of 51 percent (220) of the 428 junior and senior students enrolled in the University of Missouri-Columbia, College of Agriculture.

In order to determine if a nonresponse bias existed, multiple analysis of variance (MANOVA) was utilized to compare the means of early and late respondents on the four leadership factors (Interpersonal Relations, Administration, Management of Self, and Communications). The MANOVA procedure yielded a Hotelling-Lawley trace value of 0.045 and an F value of 0.81 ($p=8,426$; $p=.78$). It was concluded that no statistically significant difference existed between early and late respondents. Based upon the rationale of Miller and Smith (1983), that late respondents are similar to nonrespondents, the data collected were judged to be representative of the population from which the sample was selected.

The first research question was designed to ascertain the perceived leadership abilities of junior and senior students enrolled in the University of Missouri-Columbia, College of Agriculture. Agriculture students rated 27 (56%) of the statements 5.00 or higher and 19 (40%) of the statements between 4.00 and 4.99. Only 2 (4%) statements received a mean rating of 4.00 or lower. Table 1 presents the means and standard deviations of the 48 leadership statements.

The 48 leadership statements were grouped into factors using principal components factor analysis with rotation (Comrey, 1973). A four-factor pattern was selected based upon an examination of a screen plot of statement eigenvalues.

Cronbach's Coefficient Alpha reliability estimates were calculated for each of the four factors. The reliability estimates for the factors were: Factor One--Interpersonal Relations = .84; Factor Two--Administration = .82; Factor Three--Management of Self = .79; Factor Four--Communication = .86. Table 1 presents the factor loadings for leadership statements included in each of the four factors.

Pearson correlation analysis was utilized to determine if a significant ($p<.05$) relationship existed between the selected student demographic characteristics and experiences and the four leadership factors. The results of the correlation analysis are summarized in Table 2.

Table 1. Descriptive Statistics and Factor Loadings for Perceived Leadership Abilities Grouped by Factor

Factor	Mean	SD	Factor loading
<u>Interpersonal relations factor</u>	5.18	0.46	
I consider myself to be a flexible person	5.08	0.84	.52
I willingly listen to others	5.33	0.72	.67
I find it difficult to consider another person's point of view	4.98*	1.10	.51
I can see both sides of an argument in question	5.12	0.77	.42
I understand that other people have feelings, motives and goals of their own	5.56	0.61	.54
I have a good sense of humor	5.33	0.69	.39
People confide in me because they consider me trustworthy	5.29	0.66	.52
I like to see conflicts resolved	5.50	0.73	.53
I use tact in everyday life	4.88	0.88	.59
I feel people respect and admire me for the person I am	5.08	0.79	.60
I am a cordial person	5.03	0.86	.45
When someone comes to me with a problem, I try to put myself in his/her shoes so I can better understand the situation	5.07	0.87	.47
It is not easy for me to develop an interest in people	4.89*	1.21	.56
I like to maintain good interpersonal relations with co-workers	5.54	0.67	.43
<u>Administration factor</u>	4.78	0.57	
I can motivate people	4.87	0.70	.51
I am unable to inspire people	4.86*	1.22	.51
Other people accept me as a leader	4.74	0.82	.72
People look to me for advice	4.95	0.77	.62
People seek guidance from me when they have difficult times	4.75	0.88	.53
I am an effective decision maker	4.78	0.88	.54
I am willing to take charge and lead a group	4.86	1.01	.55
I am not able to persuade others to respect my point of view	4.52*	1.19	.48
Other people accept my ideas	4.71	0.65	.41
I view myself as a professional	5.00	0.93	.51
<u>Management of self factor</u>	5.27	0.47	
I persevere on a project until it is completed	5.17	0.80	.71
I enjoy success and strive for it	5.39	0.70	.50
I consider myself to be intelligent	5.26	0.65	.40
Once I begin a project, I feel I must see it through to completion	5.21	0.83	.71
Each year brings me closer to my professional goal	5.29	0.71	.58
I am enthused about my work	5.24	0.81	.57
I can work persistently for a just cause, without giving up or backing off	5.17	0.79	.62
I feel I am proficient in my work	5.43	0.61	.44
<u>Communications factor</u>	4.67	0.65	
I am the type of person who is involved with campus and community affairs	4.00	1.40	.60
I'm concerned about maintaining good interpersonal relationships	5.19	0.91	.49

Table 1 continued.

Factor	Mean	SD	Factor loading
I enjoy sharing information with others	5.22	0.86	.45
I encourage others to become involved in various projects	4.68	0.98	.60
I feel confident openly promoting issues I feel strongly about	4.90	0.93	.42
I enjoy expressing my ideas on a given issue	4.86	0.87	.52
Making friends and getting along with others is easy for me	5.02	1.01	.43
I am able to convince others of my ideas	4.69	0.67	.45
People often seat me at the head of the table in group discussion	3.68	1.24	.48
Belonging to organizations is important to me	4.27	1.37	.73
I enjoy meeting new people	5.15	0.88	.55

*Negatively worded statements were recorded by revising the scale prior to data analysis.

Table 2. Relationship Between Selected Student Characteristics and Perceived Leadership Abilities (N=175)

Characteristic variables	Factors ^a			
	1	2	3	4
	r	r	r	r
Age	.14*	.07	.05	-.01
Gender ^b	-.25*	-.02	-.03	-.04
Marital status ^c	.03	.07	-.02	-.13
Where raised ^d	.17*	-.01	-.02	-.07
Residence ^e	-.01	-.10	.05	-.24*
Hours per week	.01	.19*	.08	.05
Number in graduating class	.06	-.09	-.10	-.11

*Significant at the .05 level.

^a1=Interpersonal relations; 2=Administration; 3=Management of Self; 4=Communication

^bGender was coded: 1=female; 2=male

^cMarital status was coded: 1=not married; 2=married

^dWhere raised was coded: 1=on farm; 2=in a town or city

^eResidence (while attending college): 1=in a town or city; 2=on a farm

The correlation analysis identified a significant relationship between five selected student demographic characteristics and experiences and the four leadership factors. The Interpersonal Relations factor was significantly related to age (4 = .14), gender (r = -.25), and where raised (r = .17). Older students, females, and students raised on farms were more in agreement with statements comprising the Interpersonal Relations factor. The Administration factor was significantly related to the number of hours worked per week (r = .19). The Communications factor was significantly related to residence (4 = -.24). Students who lived in a town or city while attending college were more in agreement with statements included in the Communications factor. The Management of Self factor was not significantly correlated with any of the demographic student characteristics or experiences examined.

Pearson correlation analysis also identified a significant relationship between student participation in 121 activities and organizations, and one or more of the four leadership factors. Four activities and organizations were significantly related to two leadership factors. The results of the correlation analyses are summarized in Table 3.

Table 3. Relationship Between Participation in Activities and Organizations and Perceived Leadership Abilities (N=220)

Participation variables	Factors ^a			
	1	2	3	4
Athletics	.12	.07	.03	.18*
National Honor Society	.12	.17*	.12	.18*
FFA	-.11	.07	-.08	.15*
Student council	.10	.23*	-.06	.18*
Class officer	.09	.11	.06	.10
Foreign language club	.14*	.10	.08	.22*
Band	.06	.05	.07	.04
Departmental clubs	.03	.06	.11	.19*
Social fraternity or sorority	.05	.02	.03	.20*
Student government	-.04	.04	-.10	.08
Professional/Honorary	.01	.07	.11	.08
Intramurals	-.04	.12	.06	.23*
Church	.09	.12	.08	.25*
4-H	-.08	.05	.04	.14*
Scouts	.11	-.03	.01	.06
Livestock association	-.04	.14*	.05	.22*

*Significant at the .05 level.

^a1=Interpersonal Relations; 2=Administration; 3=Management of Self; 4=Communications.

Fifteen significant (although weak) relationships were identified between selected activities and organizations and the four leadership factors. The Interpersonal Relations factor was significantly related to participation in a foreign language club ($r = .14$). The Administration factor was significantly related to participation in National Honor Society ($r = .17$), student council ($r = .23$), and livestock associations ($r = .14$). The Communications factor was significantly correlated with student participation in athletics ($r = .18$), National Honor Society ($r = .18$), FFA ($r = .15$), student council ($r = .18$), foreign language club ($r = .22$), departmental clubs ($r = .19$), social fraternity or sorority ($r = .20$), intramurals ($r = .19$), church ($r = .25$), 4-H ($r = .14$), and livestock associations ($r = .22$). The management of Self factor was not significantly related to student participation in any of the selected activities and organizations examined. Each of the items which were statistically significant, on a practical basis revealed relatively weak relationships with the respective leadership factors.

Conclusions

Based on the findings of this study, the following conclusions were formulated.

College of Agriculture students perceived their leadership skills to be stronger in Interpersonal Relations and Management of Self than in the areas of Administration and Communications.

College of Agriculture Students who are older, female, raised on farms, or participated in a foreign language club perceive themselves to have better Interpersonal Relations Skills.

College of Agriculture students who work more hours per week or participate in National Honor Society, student council, or livestock associations, perceive themselves to have better administration skills.

Communications skills of College of Agriculture students are enhanced through participation in student organizations and activities.

Discussion

Students enrolled in the University of Missouri-Columbia, College of Agriculture tended to perceive their leadership abilities to be good. Leadership skills associated with the Interpersonal Relations factor and the Management of Self factor were perceived to be better than those associated with the Administration factor and the Communication factor.

Student leadership skills were weakest in the Communications area. This substantiates Luft's (1986) finding that speaking skills were perceived by young adults as their weakest area of leadership. Students who participated in more organizations and activities perceived their leadership skills to be stronger in the Communications area. This finding suggests that students should be encouraged to participate in more activities and educational experiences to develop their communication skills.

Students who were older, female, or raised on farms perceived their leadership skills to be higher in the area associated with the Interpersonal Relations factor. Students who participated in a foreign language club perceived their leadership skills to be higher in the areas associated with the Interpersonal Relations factor and the Communications factor.

Students who worked more hours per week or participated in the National Honor Society, student council, or livestock associations perceived their leadership skills to be higher in the areas associated with the Administration factor.

Even though student leadership skills associated with the Management of Self factor were perceived to be better than those associated with the three other factors (Interpersonal Relations, Administration, and Communications) no significant relationships were identified for selected student characteristics or participation in activities or organization.

While there are many questions that remain unanswered with regard to leadership development, this study provides a basic source of information relative to the characteristics and experiences which are related to leadership development in college and agriculture students. Program administrators should utilize information from this and other studies to implement or modify leadership development programs.

Furthermore, the following recommendations were formulated as a result of this study.

Students need more opportunities through activities and their educational experiences to develop communication skills.

Students should be motivated to increase their levels of participation and involvement in activities and organizations.

Further research should be conducted to identify other activities which influence leadership development of agriculture students.

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