
Minority Students' Attitudes Toward Agricultural Careers

B. Allen Talbert and Alvin Larke, Jr.

Abstract

The population of the United States is increasingly becoming more diversified. Historically, minorities have participated less than Whites in agricultural careers other than as laborers. Secondary agricultural education has traditionally provided entry-level preparation for agricultural careers as well as prepared students for post-secondary education in agriculture. First semester agriscience students in Texas high schools were surveyed on their attitudes toward agricultural careers. The purpose of this article is to detail how minority students in these programs view agriculture and its careers.

Introduction

There is a current and future shortage of qualified people to work in agricultural careers. This shortage potentially could be eliminated by recruiting and training more students from minority groups that are currently not being reached. These minority groups are growing in proportion of the population of the United States. Census data for 1990 shows that California and Texas were 25 percent Hispanic, there are eight states with Black populations greater than 20 percent, six states with Native Americans more than five percent, and seven states with Asian-Americans more than three percent (Dunn, 1991). As the turn of the century draws nearer, colleges of agriculture need to do a better job of recruiting and retaining members of ethnic minority groups (Larke, 1987).

A traditionally important source of recruits is agricultural education departments in secondary schools. The agricultural education profession in 1989, through the National Council for Agricultural Education, set as a priority goal "To serve all people and groups equally and without discrimination" (p. 4). The debate on how to improve agricultural education for minority groups is not new. Schmitt and Bender (1971) conducted a survey of teacher-education institutions to determine the extent to which they provided experiences and prepa-

ration for teachers of minority populations. They found that few institutions were addressing the issue.

The Texas state population is predicted to drop below 50 percent White by the year 2025 (Murdock, Hoque, & Hamm, 1989). The secondary enrollment in Texas public schools approached this minority-majority for the 1990-91 school year with 51.9 percent White, 13.9 percent Black, 31.7 percent Hispanic, 2.3 percent Asian-Americans, and 0.2 percent Native Americans (Texas Education Agency, 1991). However, the percentage of minorities enrolled in agriscience courses was disproportionately low to the percentage of minorities in the secondary school population. In the 1990-91 school year, the agricultural education enrollment in secondary schools in Texas was composed of 76.5 percent White, 6.0 percent Black, 17.2 percent Hispanic, and less than 1 percent Asian-Americans, Native Americans, and others (Eudy, 1991).

The Study

The study was conducted by the Department of Agricultural Education at Texas A&M University to determine the attitudes of minority students toward agricultural careers. The population consisted of approximately 19,000 students enrolled in the two introductory agriscience courses in Texas. A sample was randomly selected from the approximately 1,000 Texas agriscience departments. Data were collected during the fall semester in 1991 from 57 out of 60 agriscience departments with 1,399 students participating. The response rate for the study was 95%. The sample was surveyed using a five-part questionnaire developed by the researcher based on similar questionnaires by Flores (1989) and Marshall (1990). The data were analyzed using statistical analyses.

Findings

Student Ethnicity

The ethnic proportion of students in the sample closely matched that of the total agriscience enrollment. Blacks made up 6.3% of the sample, while Hispanic students made up 17.0%. Whites (72.5%) were a majority of the sample. The remaining 4.2% of the students identified their ethnicity as either Native American or Asian-American. Five students failed to respond to the item on ethnicity.

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Residence

A plurality of White students (46.3%) reported that they lived on a farm or in a rural area. One-fourth of the White students reported that they lived in a small town (population of 5,000 or fewer) while 28% identified their residence as a suburban (population of 5,001 to 50,000) or urban (population of 50,001 or greater) area. Black students reported they lived on a farm or in a rural area (35.6%), in a small town (35.6%), or in an urban or suburban area (28.7%). A majority of the Hispanic students lived in a small town (51.9%), 30.8% lived on a farm or in a rural area, and 17.3% reported they lived in an urban or suburban area.

4-H Participation

Agriscience students who were also 4-H members, or had ever been members, constituted 36.5% of the sample. By ethnicity, 39.3% of White students, 34.9% of Black students, and 22.4% of Hispanics were either present or past 4-H members.

Attitudes toward Agriculture

The students were asked 26 questions to determine their attitudes about various areas of agriculture. The questions were grouped into three areas and statistically analyzed. The first area, personal career, is a measure of how many career opportunities students saw for themselves in agriculture. Also, it was designed to measure how the students perceived the status and pay of agricultural jobs. The second area, agricultural occupations, is a measure of how the students perceived the diversity of agricultural careers. For example, the students were asked whether they thought non-production jobs, such as marketing and sales, were a part of agriculture. The final area, occupational requirements, is a measure of how much knowledge, skills, and expertise are required for careers in agriculture. Table 1 shows the students' opinions about agriculture and is broken down into minority (M) and White (W). For all three scales, the means for White students were significantly higher than those for minority students. For all three scales, minority students approached "neutral" in their attitudes.

Table 1. ANOVA of Students' Personal Opinions Scale Scores by Ethnicity

Scale	Ethnicity		Standard Deviation	F Prob.
	Status	Mean *		
Personal Career	M	2.3512	.7935	<.01
	W	2.7209	.8298	
Agricultural Occupations	M	2.4563	.7491	<.01
	W	2.8064	.7165	
Occupational Requirements	M	2.3051	.7205	<.01
	W	2.6370	.6669	

*0 = strongly disagree; 1 = disagree; 2 = neutral; 3 = agree; 4 = strongly agree

Table 2. Chance of Attending College if Eligible

Ethnicity	Chance of Attending				
	None n (%)	Little n (%)	Average n (%)	Considerable n (%)	Great n (%)
Black	7 (8.0)	8 (9.1)	31 (35.2)	13 (14.8)	29 (33.0)
Hispanic	22 (9.4)	43 (18.4)	66 (28.2)	53 (22.6)	50 (21.4)
White	41 (4.1)	88 (8.7)	290 (28.8)	236 (23.4)	352 (35.0)
Overall	70 (5.5)	147 (10.6)	408 (29.3)	321 (23.1)	445 (32.0)

Table 3. Chance of Majoring in an Agriculturally-Related Field

Ethnicity	Chance of Majoring				
	None n (%)	Little n (%)	Average n (%)	Considerable n (%)	Great n (%)
Black	17 (19.3)	23 (26.1)	22 (25.0)	13 (14.8)	13 (14.8)
Hispanic	54 (22.9)	59 (25.0)	56 (23.7)	51 (21.6)	16 (6.8)
White	97 (9.6)	227 (22.5)	294 (29.1)	214 (21.2)	178 (17.6)
Overall	179 (12.8)	325 (23.3)	384 (27.5)	294 (21.1)	214 (15.3)

Chance of Attending College if Eligible

The students were asked what they thought their chance of attending college would be assuming they were eligible to attend (Table 2). Blacks (17.1%) and Hispanics (27.8%) were more likely than Whites (12.8%) to report they had less than an average chance of attending. Less than half of the Black (47.8%) and Hispanic (44.0%) students reported a greater than average chance of attending college. A majority (58.4%) of the White students reported that they thought they had a greater than average chance of attending.

Chance of Majoring in an Agriculturally-related Field

The students were asked what they thought their chance of majoring in an agriculturally-related field would be assuming they were eligible to attend college (Table 3). Blacks (45.4%) and Hispanics (47.9%) were more likely than Whites (32.1%) to report they had less than an average chance of majoring in agriculture. White students (38.8%) were more likely to report a greater than average chance of majoring in agriculture than Black (29.6%) and Hispanic (28.4%) students.

Plans for an Agricultural Career

The students were asked whether they thought they would be employed in an agricultural career within five years of high school or college graduation (Table 4). Less than one-half of all students responded yes. Black students (36.3%) were less likely than Hispanic (41.3%) or White (48.4%) students to think they would be employed in agriculture in the near future.

The students were also asked whether they thought they would be employed in agriculture at any time within their

Table 4. Agricultural Career Plans Within Five Years

Ethnicity	Possibility of Employment in Agriculture			
	Definitely Not	Probably Not	Probably Yes	Definitely Yes
	n (%)	n (%)	n (%)	n (%)
Black	22 (25.0)	32 (36.4)	23 (26.1)	9 (10.2)
Hispanic	39 (16.5)	100 (42.2)	83 (35.0)	15 (6.3)
White	74 (7.3)	443 (43.9)	356 (35.3)	132 (13.1)
Overall	143 (10.2)	596 (42.7)	489 (35.0)	163 (11.7)

Table 5. Agricultural Career Plans Within Working Career

Ethnicity	Possibility of Employment in Agriculture			
	Definitely Not	Probably Not	Probably Yes	Definitely Yes
	n (%)	n (%)	n (%)	n (%)
Black	15 (17.0)	29 (33.0)	28 (31.8)	14 (15.9)
Hispanic	35 (14.8)	93 (39.2)	89 (37.6)	18 (7.6)
White	72 (7.1)	344 (34.1)	389 (38.5)	198 (19.6)
Overall	133 (9.5)	487 (34.8)	526 (37.6)	239 (17.1)

working career (Table 5). A majority of White students (58.1%) responded yes, while less than one-half of Black (47.7) and Hispanic (45.2%) students indicated that they thought they would be employed in agriculture during their working career.

Conclusions

The ethnic composition of agriscience education was not proportional to that of Texas public schools. Minority students were underrepresented in the two introductory agriscience courses. These two courses are the gateway to future enrollment in agriscience courses in high school. Unless minority enrollment in the introductory courses is increased, overall minority enrollment in agriscience education will continue to be small and; consequently, minority enrollments in colleges of agriculture may remain low.

Black and Hispanic students had less of a rural background than White students. Hispanic students were predominantly from small towns, while Black students had a more even distribution among rural, small town, and urban backgrounds. To overcome these differences in residential backgrounds, the urban aspects of agriculture may be emphasized to help in recruiting minority students into agriscience education. Also, colleges of agriculture may have more successful recruitment activities if they publicize agricultural careers that involve working in urban or small town areas.

Minority agriscience students, especially Hispanic students, did not have 4-H experience to the same extent as White students. If, as other parts of this research suggest, 4-H membership is related to a positive attitude toward agriculture,

involving minority youth in 4-H might lead to higher enrollments in agriscience education. To target minority populations, 4-H leaders in those areas should emphasize activities that appeal to a non-rural audience.

White students saw more career opportunities for themselves in agriculture, more occupational diversity within agriculture, and showed more agreement that occupations in agriculture require knowledge and expertise. On the other hand, minority students tended to have more negative attitudes. They thought there were fewer personal opportunities in agriculture, that agricultural occupations were primarily production-oriented, and that agriculturally-related jobs did not require training and expertise. This conclusion supports the recommendation that public relations activities need to be conducted to dispel these misconceptions.

Although a majority of White students indicated a greater than average chance of attending college, less than one-half of the Black and Hispanic students indicated so. Colleges of Agriculture need to work closer with high schools to develop strategies to encourage more minority students to pursue a college education. Agriscience teachers can help by working with guidance counselors to make sure their minority students, as well as White students, meet entrance requirements to college. Through parental contacts, agriscience teachers can also assist their students' families in finding financial aid and other methods to pay for college.

Nearly 50% of the Black and Hispanic agriscience students thought they had a less than average chance of majoring in agriculture if they went to college. Agriscience teachers need to utilize career information better so minority students may perceive agricultural occupations in a more competitive and attractive manner. Colleges of Agriculture can help by providing information on average starting salaries, career advancement opportunities, and other pertinent data.

The findings of this study suggest that minority students perceive agricultural careers as not desirable. They have less of an agricultural background to base their perceptions on; therefore, they may benefit from activities designed to provide correct, up-to-date information.

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INSTRUCTIONAL MEDIA REVIEWS

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Animal Feed Formulation: Economic and Computer Applications

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Animal Feed Formulation: Economic and Computer Applications is a 165-page textbook that explains the economic principles of feed formulation and profit maximizing techniques used with linear programming. Chapters include the computer formulation of feeds for sheep, beef cattle, dairy cattle, swine, turkeys, broilers, laying hens, catfish, and horses. Each chapter includes examples taken primarily from the National Research Council's, "Nutrient Requirements of Domestic Animals" series and animal nutrition texts. All example formulation problems are included with the software. There are comprehensive help screens available at the touch of a key or click of the mouse.

The instructional objective of this media is to demonstrate how economic principles are applied to animal feed formulation. Students become familiar with nutritional problems and how they impact on the economics of feeding animals.

Review Summary

The textbook and computer applications received a unanimous good rating from the reviewers. They felt the material was easy to read and comprehend. There was some sentiment that Appendix A - General Features of the UFFDA Program could have been a part of Chapter 2 to provide upfront the information on using the computer application. The graph below describes the average rating of the reviewers.

Summary Remarks

More detail needs to be provided in accessing and using the formulation program.

Stanley F. Kelley Assistant Professor
Sam Houston State University
Huntsville, TX

The computer software describes the economics of animal feed formulation and use for many species of livestock. Authors are consistent with NRC recommendations. Once mastered an instructor or student should be able to quickly enter and retrieve data for best economic use.

All instructors in animal nutrition have their own method of presenting nutrition principles and problems. Some have only a one, three hour course in which to present information, while others have more time. This information then would be intended for the upper level student or as consulting one-on-one actual situation.

Authors have compiled a good method of including least cost rations for animal nutrition problems. Once explained to students/clients, the understanding of different situation problems will be mastered. Good Job.

Harold G. Severance, Instructor
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This program effectively presents the economic necessity of animal feed formulation. Through examples and computer simulation, students and practitioners learn optimum feed formulations for a variety of user-defined conditions. The instructional text uses an extensive assortment of illustrated examples, and the computer program is easy to load, has well-designed windows, is user-friendly, and has an extensive "Help" menu. Overall, the text and computer program provide a comprehensive and in-depth instructional treatment.

George Bostick, Professor
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	Excellent	Good	Fair	Poor
Picture Quality		X		
Sound Quality Editing	X			
Content			X	
Currentness		X		
Organization		X		
Accuracy	X			
Vocabulary		X		
Interest		X		
Technical Quality		X		
Overall (Avg. of Reviewers)		X		