

## A Comparison of 1972 and 1980 Secondary Agricultural Education Students

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The decade of the 1970s was an important time for agricultural education. The landmark Vocational Education Act of 1963, which focused "its efforts on those – minorities in particular – who had been left on the fringes of the labor market" (Grubb & Lazerson, 1981, p. 117) had been discussed and carefully evaluated. The emphasis on civil rights continued into the 1970s and sex equity was added as an emphasis (Hillison, 1988). Girls were first admitted to the National FFA Organization in 1969 and became full-fledged participants in agricultural education during the 1970s. Efforts to enhance the performance and quality of agricultural education programs have increased since the mid-1970s (Lee, 1985).

With the beginning of the 1980s, "political changes occurred reversing the equity trend and changing it to an excellence trend" (Hillison, 1988, p. 19). Numerous reports on the condition of secondary education were issued during the 1980s, the best known of which was A Nation at Risk: The Imperative for Educational Reform (National Commission on Excellence in Education, 1983). The condition of education during the 1970s was used as a basis for many of the decisions and recommendations made in the numerous reports (Cetron, 1985).

What happened to the characteristics of agricultural education students during the 1970s in response to the equity trend? Were there changes in the academic ability of agricultural education students which may have provided support for the excellence movement? Questions such as these have been answered for vocational education students in general (Lotto, 1986; Wonacott, 1986), but they have not been answered for agricultural education students.

This study attempted to answer the above questions for agricultural education students by comparing data for 1972 and 1980. These years were selected because of the availability of data from studies of the high school classes of 1972 and 1980 by the National Center for Education Statistics (National Center for Education Statistics, 1981, 1983). As Fetters, Brown, and Owings (1984) noted:

Since both studies collected voluminous data on seniors, a unique opportunity is provided to compare and contrast the nation's seniors at two different points in time, 8 years apart. There are many reasons for expecting differences between the two senior classes. They experienced different events during childhood and adolescence and also differ in demographic composition. The educational systems from which the two groups of students were emerging were different . . . and the social system of which they were products and into which they were entering had undergone significant modifications. (p. 7)

### Purpose and Objectives

The purpose of this study was to describe and assess the changes on selected variables between the senior secondary agricultural education classes of 1972 and 1980. Specific objectives of the study were:

1. To determine the changes in student background characteristics such as race, sex, and socioeconomic status.
2. To determine the change in academic ability of students.
3. To determine the plans of agricultural education seniors after their high school education.

### Procedures

This study was a descriptive cross-sectional analysis of the senior classes of agricultural education students in the National Longitudinal Survey (NLS) with a base year of 1972 and first year follow-up data (National Center for Education Statistics, 1981) and the High School and Beyond (HSB) base year of 1980 and first year follow-up data (National Center for Education Statistics, 1982). For

the NLS study, more than 16,000 seniors in more than 1,000 public and private schools participated. In the HSB study, base year and follow-up data were collected from approximately 28,000 seniors in 1,015 public and private high schools across the nation. In both years, the students were selected through a two-stage probability sample, with schools as the first stage units and students within schools as the second stage units.

The 1972 and 1980 senior agricultural education students were identified based on the self-declared curriculum categories in the data set. It was assumed that the self-identified curriculum type provided a uniform method of selecting students; this method was used because the HSB data set did not include school reported information such as courses taken for its senior cohort. All of the students who identified themselves as "Agricultural Education Major" were included in the study. Accordingly, the 1972 sample consisted of 373 seniors and the 1980 sample consisted of 390 seniors.

Academic ability was determined by the scores on vocabulary, reading, and mathematics tests. The students were given a 15-item, 5-minute vocabulary test; a 20-item, 5-passage, 15-minute reading test; and a 25-question, 15-minute mathematics test (Fetters, Brown, & Owings, 1984, pp. 19-20). Test data were continuous and were analyzed using independent  $t$  tests but with critical values adjusted for root design effects and large sample sizes (Fetters, Brown, & Owings, 1984). Analyses of categorical variables were limited to frequency counts and comparisons since adjusted critical values were not available. Weights relevant to both data sets were used in the analysis to provide estimates of population percentages (Fetters, Brown, & Owings, 1984). Socioeconomic status was a composite of five components: father's education, mother's education, family income, father's occupation, and household possessions (Fetters, Brown, & Owings, 1984, p. 12).

### Results

There were considerable changes in the student background characteristics over the eight-year period. As shown in Table 1, the number of students who were female almost doubled and the number who were black increased 71%. Other notable changes included a 21% increase in the Hispanic or Spanish group and a 74% decrease in the American Indian or Alaskan natives group. The "other" race category disappeared from the comparison. There were no changes in the socioeconomic status of the two classes of students.

Table 1  
Comparison of Background Characteristics of Agricultural Education Students

Categories	1972	1980
Sex		
Male	86.8	74.0
Female	14.2	26.0
Race		
Hispanic or Spanish	5.2	6.3
Am. Indian or Alaskan natives	3.6	0.9
Asian or Pacific Islanders	0.1	0.6
Black	10.33	17.4
White	73.5	74.8
Other	7.5	
Socioeconomic status		
LOW	44.9	41.4
Middle	47.2	50.2
High	8.0	8.2

**Note.** Numbers in table are weighted population percentage estimates.

Table 2 presents the means of the 1972 and 1980 test batteries on vocabulary, reading, and mathematics and their tests of significance. According to the adjusted critical value procedure, there were no changes in the three test scores considered to measure academic ability.

Analysis of the plans indicated by seniors revealed that the percentage of seniors who planned some form of postsecondary education as "the one thing that most likely will take the largest share of your time in the year after you leave high school" showed a mixed shift between 1972 and 1980. Four-year college was the most frequently mentioned plan, involving a 15% increase from 1972 to 1980.

Table 2  
Tests of Significance of Test Batteries

Scaled items	1972	1980	t value
Vocabulary			
Mean	43.1090	43.5050	-05837
S D	8.1461	8.0793	
N	275	298	
Reading			
Mean	43.014s	43.0437	-0.0385
N	<u>94165</u>	<u>87576</u>	
	275	298	
Mathematics			
Mean	43.3781	425392	1.1643
SD	8.5321	8.6789	
N	275	296	

Note. The raw test scores were converted to T scores for purposes of comparison. An adjusted critical value of 3.61, calculated by multiplying the average of the root design effects (1.2 for 1972) and 1.6 for 1980 as reported in Fetters, Brown, & Owings, 1984, p.51) times the t value for an alpha of .01 (2576, two-tailed test), was used in determining the statistical significance of the t values.

The seniors planning to work full time decreased 36% while those planning to be in military service more than doubled.

Table 3  
Comparison of Plans the Year After High School for Agricultural Education Students

Activity that will take largest share of time	1972	1980
Taking courses at a 4-year college or university	47.9	55.1
Working full-time	16.2	10.3
Military Service	5.0	10.8

**Note.** Numbers in table are weighted population percentages estimates. Students in both years were asked, regardless of their plans, if they thought they had the ability to complete college. The responses ranged from "yes, definitely" to "definitely not." the students' responses indicate they believed that they had the ability to complete college showing an increase in the "yes, definitely" category from 19.7% to 26.3%. A similar increase was noticed in the "yes, probably" response category.

The students were asked in 1972 and 1980 to indicate the type of job they expected or planned to have at age 30. The percentage of students indicating they planned to enter professional jobs such as accountant, artist, dentist, physician, registered nurse, engineer, lawyer, scientist, librarian, politician, and school teacher, increased from 10.0% in 1972 to 17.7% in 1980. More of the 1980 seniors than 1972 seniors planned to choose female-dominant jobs (15.6% vs. 10.8%) such as clerical; homemaker or housewife, sales, and service. This increase was accounted for, however, by the increase in the enrollment of females in agricultural education (chi-square test, alpha of .01). There was a compensating decline in those planning to choose male-dominant jobs such as craftsman, farmer/farm manager, laborer, manager/administrator, military, operative, proprietor/owner, protective service, and technical.

### Conclusions and Implications

A comparison of data for the 1972 and 1980 senior classes of secondary agricultural education students was made to determine the changes that have occurred in the student background characteristics, academic ability, and short-term plans for the year after high school. The background

characteristics studied showed that enrollments of female and black students increased considerably between 1972 and 1980. These shifts may have been due to national policies regarding participation of minority and female students in vocational education programs. Also, some of the changes may have been due to "other" race shifting to minority designation. There were no major changes in the socioeconomic status of the two classes.

Achievement of students on standardized tests is a good indication of academic ability and marked changes in test score levels may have an effect not only on who attends and succeeds in college but on other life outcomes (Eckland, 1982). Although there was a decline in secondary school test scores in general between 1972 and 1980 (Fetters, Brown, & Owings, 1984, p. 19), the findings of this study revealed there was no change in the academic ability of agricultural education students during the same time period.

High school graduates make important transitional decisions in their lives after 12 years of full-time schooling. Two of the most important decisions are about their work or occupation and education after high school. The eight-year trends in planned activities were examined in the three categories of attending a four-year college, working full time, and entering military service. Despite the fact that there is often a gap between students' plans and the reality of their immediate activities, the trend of changes is fairly consistent with their perception of ability to complete a college education immediately after high school.

Secondary agricultural education students in 1972 and 1980 were most likely to aspire to jobs in male-dominant occupations. There was an increase in the students planning to enter female-dominant jobs and the increase may have been due to the increased enrollment of female students or to an increase in males choosing female-dominant occupations. Aspiration for professional jobs at age 30 was consistent with enrollment in a four-year college as one of the preferred choices.

The results of this study suggest that the equity movement has brought about important increases in the enrollment of female and black students in agricultural education. Continued effort is needed, however, to attract more females into this program which prepares for male-dominant occupations. One area of concern that should be investigated is the major decline in the enrollment of American Indian or Alaskan natives. The lack of decline in test scores is encouraging. Perhaps agricultural education will realize its goal of preparing students for various occupations in the industry of agriculture or for further education.

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