# Recent Pennsylvania Agricultural Education Graduates: Their Academic Ability and Teaching Status

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Within colleges and universities, departments of agricultural education prepare young people to teach agriculture at the secondary level. Given problems of pay, prestige, and morale, those who educate teachers sometimes wonder if they are doing a disservice to their students in encouraging them to teach, especially when business and industry compete with local school districts for qualified graduates. Professors of agricultural education often hear the phrase, "Well if I can't get a job, I can always teach." In other words, teaching is a last resort for those who cannot find work elsewhere.

Schlechty and Vance (1981) recently completed a study of the academic ability of North Carolina's teachers based on entry level test scores. They reported the following:

> Consistent with popular opinion our findings indicate that those most likely to leave teaching early and in the greatest number come from the ranks of the more academically able. Those who are likely to stay in the classroom the longest and the greatest numbers come from the ranks of the least academically able. Thus, it seemed reasonable to expect that teachers who scored well on measures of academic ability would be more likely to opt out of teaching than their lower scoring colleagues. (p. 106)

They concluded that there is a strong negative relationship between measured academic ability and teaching status. They also found that in North Carolina the academically more able leave teaching in greater proportionate numbers than do the less able, and that poor recruitment and retention in North Carolina appear to be causing the talent pool to deteriorate as measured by tests of academic ability.

Weaver (1979) of Boston University challenges educators to devise a system that attracts the most talented into education at a time of severe market stress. The creation of new knowledge, the emergence of leadership in the field, and the continuation of positive change are dependent upon a solution to the education "brain-drain." He also states that the educational profession must be able to make the claim that its members are competent in the basics they are teaching.

The most severe criticism to date of the academic ability of graduates entering the field is voiced by Gene Lyons (1979). He reported that teachers across Texas are starting the school year unable to



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"read as well as the average 16-year old, write notes free of barbarisms to parents, or handle arithmetic well enough to keep track of the field trip money" (p. 108).

Reports of this alarming situation from noted teacher educators prompted The Pennsylvania State University's Department of Agricultural and Extension Education to study recent graduates (1975 to 1980).

## Methodology

### Population

The population chosen for this study consisted of all graduates (1975 to 1980) of The Pennsylvania State University's Department of Agricultural and Extension Education (N=153). This group of graduates was divided into three subgroups: (a) those who entered teaching and are still teaching (N=53), (b) those who entered teaching and departed after teaching one year or more (N=40), and (c) those who did not enter teaching upon graduation but chose another field of endeavor (N=60).

### Limitations

There were three limiting factors to this study:

1. The data collected were based on those students who entered the job market from 1975 to 1980.
2. "Academically able" is not defined as the ability to teach but refers to how a student performed in four years of collegiate studies.
3. This study was limited to those students who graduated from the Department of Agricultural and Extension Education at The Pennsylvania University.

Two indicators used to measure academic ability of students who recently graduated were (a) the four-year cumulative grade point average (GPA), and (b) the letter grade earned on the student teaching experience. The GPA was used as a measure of ability because studies have shown that teachers identified as successful earned high grades in college (Watts, 1980). This is not to say that grades are the only measure of successful teaching, but they do give some indication of how a student performed in college. It was also reasoned that the GPA for four years of study is a much more accurate measure of academic ability than standardized test scores used in past studies to reflect academic ability.

The requirements for graduation in the Department of Agricultural and Extension Education at The Pennsylvania State University require students to study technical and scientific agriculture courses as well

as courses in learning theory, educational planning, instructional strategies, and educational evaluation. These technical and scientific agriculture courses are offered through the College of Agriculture and reflect students' ability in an area of specialization. The agricultural courses are the same for students who major in an agriculture science and have no plans to teach. Therefore, it can be stated with confidence that a four-year average of college grades does reflect one's academic ability.

GPA's, on the other hand, cannot be considered an accurate measure of a student's ability to teach. However, the student teaching experience does require students to demonstrate teaching ability. The 10 week student teaching experience, as it is administered through the Department of Agricultural and Extension Education, provides a student with on-site instruction in the practical application of teaching methods and strategies.

While at the assigned school, the student is taught by a cooperating teacher who has experience in teaching as well as supervision and evaluation. Also, the student is visited at least three times by a university-based faculty member who also teaches and assesses student progress. The cooperating teachers are instructed to allow student teachers to teach as much as possible. Grades are assigned at the end of the 10 week experience, and reflect the student teacher's level of competence in teaching vocational agriculture to high school students. Grades for the student teaching experience reflect, to a degree, teaching ability. These two empirical measures are used to determine the academic ability of the subjects within this study.

It is interesting to note that nationally 56.7% of all agricultural education graduates chose to enter teaching (Craig, 1977). The percentage of graduates of the Pennsylvania program who entered teaching is 61% over the last five years, nearly 5% above the national average.

Table 1

*Annual Number of Men and Women Graduates in the Department of Agricultural and Extension Education*

| | Men | | Women | | Total |
|---|---|---|---|---|---|
| | n | % | n | % | n |
| 1975-76 | 20 | 80 | 5 | 20 | 25 |
| 1976-77 | 27 | 96 | 1 | 4 | 28 |
| 1977-78 | 26 | 84 | 5 | 16 | 31 |
| 1978-79 | 20 | 68 | 8 | 32 | 28 |
| 1979-80 | 29 | 66 | 12 | 34 | 41 |
| Total | 122 | | 31 | | 153 |

The total population consisted of 31 women (20%) and 122 men (80%). Further examination of the data in Table 1 indicates there has been an increase in the percentage of women graduates in recent years.

GPA and student teacher grades were collected for all students. Mean GPA and student teacher grades were calculated for graduates on a yearly basis and for the five year period.

## Findings

It was found the recent data contradict the concerns that our more academically able graduates are not teaching. These data are displayed in Table 2. There is considerable evidence that those students who are still teaching had a higher cumulative grade point average, and achieved higher grades on their student teaching experience, than those who left the profession or never taught. Furthermore, the data indicate that those students who left teaching were less academically able than those that stayed. When data of male and female graduates are examined, the trend continues. However, caution must be used in the interpretation of these data due to the low number of women in the study.

Table 3 shows that individuals who did not enter teaching had a lower GPA than those who entered the profession. Furthermore, it also shows that those individuals who entered teaching and left after one or more years of experience had a lower GPA than those now teaching. When student teacher grades are examined in Table 4, the individuals who are still teaching did consistently better than the other two groups. Those who did not choose to enter teaching, and went on to other careers, scored lowest.

## Summary

This study was conducted to compare the academic ability of students who majored in agricultural education, and are still teaching, to those who never taught or left teaching. Teachers of agriculture in Pennsylvania in the past five years possess a higher degree of academic achievement than their classmates who did not teach. This same trend continues when men's and women's academic ability are compared.

Table 2

*Mean Student Teaching Grades and Cumulative Grade Point Averages of Agriculture Education Graduates Between 1975 to 1980 by Level of Teaching Experience*

| Teaching experience | Males | | | Females | | | Total Group | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | $\bar{X}$ GPA | $\bar{X}$ Student Teaching Grade | n | $\bar{X}$ GPA | $\bar{X}$ Student Teaching Grade | n | $\bar{X}$ GPA | $\bar{X}$ Student Teaching Grade |
| Without experience | 45 | 2.65 | 3.46 | 15 | 2.84 | 3.47 | 60 | 2.70 | 3.46 |
| With experience | 33 | 2.79 | 3.59 | 7 | 2.67 | 3.29 | 40 | 2.77 | 3.54 |
| Present teachers | 44 | 2.84 | 3.75 | 9 | 3.02 | 3.56 | 53 | 2.87 | 3.72 |

Table 3

*Summary of Agricultural Education Graduates' Cumulative Grade Point Average by Level of Teaching Experience for the Years 1975 to 1980.*

| Teaching experience | 1975-76 n | GPA | 1976-77 n | GPA | 1977-78 n | GPA | 1978-79 n | GPA | 1979-80 n | GPA |
|---|---|---|---|---|---|---|---|---|---|---|
| Without experience | 5 | 2.19 | 14 | 2.66 | 11 | 2.82 | 11 | 2.75 | 19 | 2.76 |
| With experience | 10 | 2.75 | 4 | 2.73 | 10 | 2.84 | 9 | 2.65 | 7 | 2.89 |
| Present teachers | 10 | 2.82 | 10 | 2.66 | 10 | 2.92 | 8 | 3.17 | 15 | 2.79 |



Table 4

*Summary of Agricultural Education Graduates' Student Teaching Grades by Level of Teaching Experience for the Years 1975 to 1980*

| Teaching experience | 1975-76 n | S.T. | 1976-77 n | S.T. | 1977-78 n | S.T. | 1978-79 n | S.T. | 1979-80 n | S.T. |
|---|---|---|---|---|---|---|---|---|---|---|
| Without experience | 5 | 3.40 | 14 | 3.57 | 11 | 3.70 | 11 | 3.36 | 19 | 3.32 |
| With experience | 10 | 3.40 | 4 | 3.61 | 10 | 3.60 | 9 | 3.22 | 7 | 4.00 |
| Both groups | 15 | 3.40 | 18 | 3.66 | 21 | 3.65 | 20 | 3.30 | 26 | 3.50 |
| Present teachers | 10 | 3.70 | 10 | 3.80 | 10 | 3.50 | 8 | 3.75 | 15 | 3.87 |

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