

### Teleconference

Total cost per semester=\$300 equipment rental+\$500\* slide and handout development=\$800.

Total s.c.h./semester=150 students x 5 weeks x 1½ s.c.h./week=1125 hours.

Cost/s.c.h.=\$800/1125=\$0.71.

\* \$1500 per 10-farm set, projected to be used for three semesters.

This figure for teleconferencing costs, though low, is nonetheless higher than that for mass telephone education programs in Wisconsin (as low as \$0.14/s.c.h. in 1975) because our system was used much less intensively for much smaller numbers of students.

### Conclusions

Instructors using field trips should consider switching to telelectures. The above results show that students feel it is an adequate replacement, that they enjoy it, that although it does not apparently improve

course grade it augments the limited experience of those disadvantaged in other ways, and that it is cost- and time-effective. It is particularly helpful in its remedial effect as part of a broader package of didactic tools to reach all students.

Table 1 indicates that our results may also have underrated the effectiveness of teleconferences because of problems in implementing the approach the first time. It is essential for those considering the use of teleconferencing to select good communicators to be interviewed, guide the discussion along lines relevant to the course, coach laboratory instructors to be enthusiastic and use time efficiently, insist that students prepare well, and obtain a complete set of interesting slides to be shown during the teleconference. Under these conditions, teleconferencing promises to be an effective tool indeed in teaching undergraduate farm management.

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## UPDATE STUDY

# Success of Former Vocational Agricultural Students In College of Agriculture Curricula

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Since World War II, many professors and administrators in colleges of agriculture have questioned the wisdom of college-bound students taking vocational agriculture in high school. Although these reservations are seldom written, the advice to those students is "Get all the math and science you can in high school." Rarely, if ever, are students advised to "Get all the agriculture you can in high school." Thus, many high school students have elected to forego vocational agriculture in order to "better" prepare themselves for the rigors of college.

To assess validity of such advice, a number of studies were made in the 1950s and early 1960s to determine academic success of former vocational agriculture students in colleges of agriculture. Wiggins (1953), studying graduates from Pennsylvania State College over the period 1941 through 1952, concluded that "vocational agriculture ... was equal to any other high school curriculum as preparation for an agricultural curriculum at the Pennsylvania State College." Cunningham (1958) studied agriculture student performance at Ohio State University. He found that students with vocational agriculture in high school had

higher scholastic records in technical agriculture subjects and mathematics than did those without such training, but did not do so well in English. Horner, et al. (1960), reporting results of a study involving 421 agricultural students at the University of Nebraska, stated that "a good course in high school vocational agriculture is excellent college preparation for the student planning to attend agricultural college." Similar results were found in studies conducted in Kansas, Oregon, West Virginia, Iowa, and several other states. A summary of 27 of these studies was made by McClelland (1965) in which he concluded:

1. Former students of vocational agriculture do as well or better than those without vocational agriculture in agricultural colleges.
2. Students who had vocational agriculture were more successful in some beginning agricultural courses and in botany.
3. Vocational agriculture students who plan to attend college should also enroll in preparatory mathematics and science courses.

Considering the problem well-researched, few, if any, studies of this nature have been conducted since 1965. However, Barr (1982), reported that a number of deans from midwest and eastern colleges currently have the impression that vocational agriculture students do not get the mathematics, English, and science backgrounds in high school necessary to

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compete in college. He noted that many prefer students with stronger science and mathematics backgrounds over those with vocational agricultural training and experience and question vocational agriculture programs as a source of quality students. Barr indicated that if this is the prevailing philosophy, in the not-too distant future those teaching agriculture in high schools and colleges, those involved in agricultural research, and those employed in government jobs in agriculture will have extremely limited agricultural backgrounds and, therefore, little or no feel for the farm. All of which prompted the question: Are the research findings from the 1950s and 1960s still valid? Certainly, changes in high school and college courses and curricula have occurred since the 1960s. Perhaps more important, major changes in student composition in vocational agriculture and in agricultural colleges have taken place since that time. Obviously, it's time to research the effect of vocational agriculture on performance of students in colleges of agriculture again. The research reported herein was conducted to begin that re-examination.

### Objectives

Objectives of this study were to determine if former students of vocational agriculture do as well as others in agricultural curricula at West Virginia University with regard to:

1. Grade Point Average (GPA) upon graduation from college
2. Performance in basic common courses

### Methodology

Data were collected from student files in the Student Records Offices, College of Agriculture and Forestry, West Virginia University, and at Potomac State College, a branch of WVU where a number of graduates begin their college careers. High school transcripts were scrutinized to determine vocational agriculture participation. Grades of basic college courses were recorded from college transcripts.

West Virginia University Computer Center facilities were used to sort data and determine mean values. Analysis of variance (F-Ratio) was utilized to measure significance of differences existing in course grades and overall grade point averages between student groups.

### Limitations

The study was limited to the 154 students who:

1. Entered WVU or PSC as freshmen,
2. Graduated with Bachelors degrees in Animal and Veterinary Sciences, Plant and Soil Sciences, Resource Management, or Agricultural Education, and
3. Graduated during the 1982, 1983 academic years.

### Findings

Mean course grades and overall grade point averages (GPAs) of students included in the study are

found in Table 1. Although the original intent was to categorize vocational agriculture experience by "one or two years" and "three or four years," there were only six students who fell into the former category. Therefore, data were analyzed comparing the 23 students with one or more years of vocational agriculture with those 131 who had none.

A significant difference in grades was found only with respect to the course, English 2, a requirement for all students. Graduates who had not taken vocational agriculture in high school achieved higher grades in the course than those who had taken one or more years of vocational agriculture, grade averages of 2.86 and 2.48, respectively. Overall grade point averages at graduation were nearly identical for the two groups.

### Conclusion

This study, although limited in scope, tends to re-confirm the conclusion reached by McClelland (1965) and others that former students of vocational agriculture do as well or better than those without vocational agriculture in agricultural colleges. Further

**Table 1: Academic Performance in Basic Courses in Agricultural Curricula by Students Who Did and Did Not Have Vocational Agriculture in High School**

	Vo-Ag in High School		Overall Mean (n-154)	F Value
	One or more years (n-23)	None (n-131)		
Biology 1 General Biology	2.48	2.41	2.42	0.12
Biology 2 General Biology	2.16	2.48	2.43	1.98
Chemistry 11 Survey of Chemistry	2.77	2.45	2.58	0.99
Chemistry 12 Survey of Chemistry	2.27	2.43	2.33	0.08
Chemistry 15 Fundamentals of Chemistry	2.40	2.41	2.40	0.00
Chemistry 16 Fundamentals of Chemistry	2.11	2.35	2.33	0.62
Math 3 College Algebra	2.26	2.55	2.50	1.31
English 1 Composition and Rhetoric	2.57	2.77	2.74	1.18
English 2 Composition and Rhetoric	2.48	2.86	2.80	3.99
Economics 51 The Economic System	2.56	3.10	2.93	2.48
Economics 54 Principles of Economics	2.71	2.77	2.77	0.05
Agronomy 2 Principles of Soil Science	2.65	2.47	2.50	0.68
Agronomy 10 Forest Soils	2.00	1.92	1.93	0.01
Ag. Economics 104 Farm Management	2.62	2.72	2.70	0.22
Ag Mechanics 152 Shop Theory and Methods	3.52	3.44	3.48	0.16
Animal & Vet. Science 51 Principles of Animal Science	2.91	2.88	2.89	0.02
Plant Science 52 Principles of Plant Science	2.72	3.04	2.98	1.98
OVERALL GPA <sup>2</sup>	2.81	2.88	2.87	0.50

<sup>1</sup>ANOVA significant at .05 level of confidence.

<sup>2</sup>Based on a 4 point grade scale. Grade Scale (A-4, B-3, C-2, D-1, F = 0).

studies are needed. For the moment, let's not write off vocational agriculture programs as a potential source of future agricultural educators, administrators, and scientists.

### References

Barr, Alfred L. 1982. Memorandum to author. June 25.  
 Cunningham, Clarence Jr. 1958. "Relationship of Selected Pre-College Experiences to Scholastic Achievement in the College of Agriculture at the Ohio State University." Master's Thesis. Ohio State University, Columbus.

Horner, J.T., J.R. Nuttle, and R.D. Schnieder. 1960. "High School Boys Do Well in College," *Nebraska Farmer*, November 5.  
 McClelland, John B. 1965. A Summary of Studies in Achievement of Vocational Agriculture Graduates in College. Ames: Department of Education, Iowa State University.  
 Wiggins, Charles S. 1953. "The Effectiveness of Vocational Agriculture in High School as a Basis for the Four-Year courses in Agriculture at the Pennsylvania State College," Pennsylvania State College, University Park.

## INNOVATION REPORT

# Five-Week, One-Hour Agricultural Economics Courses

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### Introduction

The importance of some economic training has been recognized for all curriculums in the college of agriculture for many years. Agricultural students have always been encouraged to take a minimum number of courses in Agricultural Economics to meet specialized marketing needs. In recent years, many changes have occurred in the economic and institutional considerations in marketing agricultural commodities and the purchased inputs used in their production. Marketing systems have become much more specialized both with respect to commodities and to inputs. Agricultural majors need additional training in the application of economics and micro-computers to the operation and management of highly specialized, large-scale marketing and manufacturing firms (3). To cope successfully with the changes, many departments have added courses in marketing to their curriculums. Professors teaching the courses in agricultural marketing, and feedback from other departments, students, and industry has led to a changed format for teaching agricultural marketing courses at Mississippi State University. One teaching format developed by the Department of Agricultural Economics is the five-week, one-hour agricultural marketing, agri-business and micro-computer application course.

The development of the five-week, one-hour agricultural marketing, agribusiness and micro-computer application courses presented in Table 1 is viewed by the authors as one of the most important teaching innovations affecting our undergraduate

program and its students that has occurred in recent years. These courses provide agricultural economics majors as well as other agricultural majors with needed training in the application of economics to the operation and management of the various components of the food industry: the farm supply sector, the farm sector, and the food marketing system. In addition, the

**Table 1. Course numbers and titles of agricultural marketing five-week, one-hour courses, Department of Agricultural Economics, Mississippi State University, 1982**

AEC 2411	Introduction to Agricultural Commodity Marketing
AEC 2421	Cotton Marketing
AEC 2431	Grain Marketing
AEC 2441	Livestock and Meat Marketing
AEC 2451	Dairy Marketing
AEC 2461	Marketing Fruits, Vegetables, and Viticultural Products
AEC 2471	Poultry and Catfish Marketing
AEC 2481	Ornamental and Floricultural Products Marketing
AEC 2491	Commodity Futures Markets
AEC 2511	Introduction to Marketing Agricultural Supplies
AEC 2521	Merchandising Agricultural Supplies
AEC 2531	Marketing Seeds
AEC 2541	Agribusiness Sales Management
AEC 2551	Management Techniques for Agribusiness
AEC 2561	Agribusiness Organization and Structure
AEC 2571	Transportation and Distribution Management in Agribusiness
AEC 2581	Analysis of Performance for Agribusiness
AEC 2591	Estimating Market Potential and Forecasting Sales in Agribusiness
AEC 2621	Planning and Financial Management for Agribusiness
AEC 2631	Use of Microcomputers in Agribusiness

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Source: Syllabi of Courses, 1982, Department of Agricultural Economics, Mississippi Agricultural and Forestry Experiment Station, Mississippi State University.