

The Relationship Between Teacher Effectiveness and  
Agreement with the Philosophy Adopted by the  
Agricultural Education Profession

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Contemporary pressures for accountability have resulted in increased interest in defining and justifying the content of all teacher education programs. Competency-based education has become vocational education's answer to accountability, and many teacher education programs have made an effort to implement competency-based education. To accomplish this in agricultural teacher education, the major thrust of recent research has been to identify professional and technical competencies needed by agricultural education teachers. Most of these studies have resulted in lists of professional and technical competencies developed from the opinions of individuals in the profession and validated by agricultural education teachers, teacher educators, and state supervisors. More than 25 of these competency studies have been conducted in agricultural education in the past 10 years (Rush, 1984).

Effective teachers, however, can neither be identified simply by their command of technical subject matter nor their use of a particular instructional methodology. As Loftis and Ray (1974) point out, the teacher plays a much larger role in the educational process than simply as a disseminator of information, and therefore must possess more than a series of technical competencies.

A factor with potential for influencing teacher effectiveness is the beliefs and philosophies held by teachers. This influence is manifested in a variety of different ways. Research on teacher effectiveness has indicated that teacher beliefs influence, at least in part, the decisions teachers make in the classroom (Ajzen & Fishbein, 1971). Furthermore, educators have stressed in the literature that a stated philosophy is essential for development of program standards and for program evaluation, assists in setting program direction and serves an interpretive function, assisting teachers in understanding why they do what they do and in evaluating new methods and curricula. Research studies on agricultural education teacher competencies have also found that teachers perceive a sound instructional philosophy of vocational agriculture as an important competency for agricultural teachers to possess (Cheek & Beeman, 1978; Witmer, 1979). A few studies have found a definite relationship between teacher beliefs and teacher effectiveness.

Vocational educators and particularly agricultural education teacher educators have always placed an emphasis on the importance of a sound vocational philosophy. In fact, much of the justification for separate agricultural education teacher education has been that the educational philosophy of vocational agricultural and general education is substantially different.

The importance of a sound philosophy to agricultural educators resulted in the adoption of *The Philosophy of Vocational Agricultural Education* by the Agricultural Education Division of the American Vocational Association (AVA) in December of 1975. That statement listed key concepts "that provide a stability and direction" to the vocational agriculture program (Agricultural Education Division, 1976).

### Statement of the Problem

Research to guide agricultural teacher educators in creating effective teacher education programs has focused primarily on identifying specific teacher competencies. A review of literature indicates that this approach by itself is not sufficient and that teacher beliefs are related to teacher effectiveness. Very little research has been conducted on the beliefs of agricultural teachers and what relationship those beliefs have to teacher effectiveness. While the agricultural education profession has adopted an official statement of beliefs, no research has been found that has investigated whether teachers accept those beliefs and whether those beliefs are related to teacher effectiveness.

### Purpose of the Study

The purpose of this research was to investigate the relationship between teacher effectiveness and agreement with the philosophy and key concepts adopted by the Agricultural Education Division of the AVA. Additional purposes of the study were to investigate the relationship between selected demographic variables and teacher effectiveness, and the relationship between selected demographic variables and teacher agreement with the philosophy adopted by the Agricultural Education Division of the AVA.

### Research Questions

Specific research questions were:

1. What is the relationship between teacher effectiveness and teacher agreement with the philosophical statement adopted by the Agricultural Education Division, AVA?

2. What is the relationship between teacher effectiveness and teacher agreement with each of the key concepts adopted by the Agricultural Education Division, AVA?

3. What is the relationship between teacher effectiveness and selected demographic variables?

4. What is the relationship between selected demographic variables and teacher agreement with the philosophical statement adopted by the Agricultural Education Division, AVA?

### Methodology

The research methodology used in this investigation was descriptive in nature and descriptive statistics were used to describe the relationships of interest. Because the study dealt with a population, inferential statistics were not deemed appropriate and were not used.

The primary subjects for this study were agricultural teachers in Virginia identified by state supervisors of vocational agriculture the subjects were then verified by selected teacher educators in agricultural education as the most or least effective agricultural teachers.

State supervisors were asked to identify 11% of the most and least effective teachers in their particular area using a mutually developed and agreed upon list of criteria. The supervisors were also asked to identify 3% of their teachers as alternates for each of the categories. The names of the teachers identified were then randomized and presented to a panel of teacher educators from the two agricultural education training institutions in Virginia. The teacher educators were asked to identify the teachers on the list as being in the most or least effective category. Only the teachers upon which the state supervisors and teacher educators agreed were used in the study.

Forty teachers were eventually included in the most effective teacher group and 33 teachers were included in the least effective teacher group. In addition, the general population of 368 agricultural teachers in Virginia was used to investigate the relationship between selected demographic variables and agreement with the official philosophy adopted by the profession.

The instrument used to collect the data consisted of a series of statements taken directly from *The Philosophy of Vocational Agricultural Education* adopted by the Division of Agricultural Education, AVA (1976). The language of the concepts was changed only (a) to make the individual statements a grammatically correct completion of the initial statement on the questionnaire: "Vocational agriculture should:," and (b) to limit the statements to one idea. The extent of

the teacher's agreement with each of the items was evaluated using a 1 to 6 Likert-type scale with 1 representing "Strongly disagree," 2 "Disagree," 3 "Tend to disagree," 4 "Tend to Agree," 5 "Agree," and 6 "Strongly Agree." The instrument also had a section which asked for selected demographic information.

Data for this study were collected via a mailed instrument. The instrument was sent to all agricultural education teachers in Virginia. The instrument was mailed with a cover letter asking for teachers' cooperation and informing them that their responses would entitle them to a chance at winning a personal computer. Four additional follow-ups were conducted including a postcard, a letter, an additional survey form, a telephone call, and several personal contacts. Return rate for the most and least effective teachers was 94.5% and for the entire population of teachers was 77.4%.

To answer research question number 1, ratings of the concepts were summed and averaged to form an overall rating of agreement with the philosophy adopted by the Agricultural Education Division, AVA (1976) for each respondent. A biserial correlation coefficient was calculated comparing agreement with the total philosophy and teacher effectiveness.

To facilitate analysis and discussion of the individual items for research question number 2, a factor analysis was performed to group the items. The factor analysis was conducted on the responses from the general population of agricultural teachers because the number of teachers from the most and least effective groups was too small for a factor analysis. The results were used to group the individual items for discussion. A biserial correlation coefficient was then calculated for each of the concepts as well as each of the factors, comparing the most and least effective teacher groups.

Effect sizes for purposes of discussing the data for research questions 1 and 2 followed Cohen's (1969, pp. 76-77) recommendations: small effect size-- $r = .10$ ; medium effect size-- $r = .30$ ; large effect size-- $r = .50$ .

Research questions 3 and 4 were analyzed with correlation coefficients. Biserial correlation coefficients were calculated to measure the relationship between teacher effectiveness and the demographic variables in question 3. For research question number 4, Pearson product-moment correlation coefficients were calculated to compare demographic variables and agreement with the overall philosophy adopted by the profession.

## Findings

### Research Question Number 1

What is the relationship between teacher effectiveness and teacher agreement with the philosophical statement adopted by the Agricultural Education Division, AVA?

The most effective teachers and the least effective teachers indicated that they agreed with the philosophy with mean ratings of 5.279 and 5.190 respectively. A positive correlation coefficient of .14 indicated that the most effective teachers agreed more strongly with the philosophy than the least effective teachers, but that the effect size was small.

### Research Question Number 2

What is the relationship between teacher effectiveness and teacher agreement with each of the key concepts adopted by the Agricultural Education Division, AVA?

Ratings by both the most effective and least effective teachers indicated agreement with all of the concepts representing the philosophy of the profession. The ratings ranged from means of 4.72 to 5.77. The most effective teachers had mean ratings below 5.0 for three concepts and mean ratings for four concepts above 5.5. The least effective teachers had mean ratings for five concepts under 5.0 and mean ratings for three concepts above 5.5. Correlations between group membership and strength of agreement for those concepts with at least a small effect size of .1 are presented in Table 1. The most effective teachers rated the first 14 concepts higher than did the least effective teachers, while the final seven concepts were rated higher by the least effective teachers. All but one of the correlation coefficients represented a small effect size meaning that the amount of variance for each of the concepts that could be explained by group membership was between one and nine percent. The concept that vocational agriculture should be developed and conducted as part of educational systems had a medium effect size of  $r = .30$ .

The means of the factors created by the factor analysis were also used to compare the most and least effective teachers. The means and correlations of those factors are presented in Table 2.

### Research Question Number 3

What is the relationship between teacher effectiveness and selected demographic variables?

A positive correlation coefficient was found between teacher effectiveness and each of the demographic variables. The highest correlation was with educational level ( $r = .45$ ) with the most effective teacher group having more education than the least effective teacher group. Total years teaching experience had the next highest correlation coefficient ( $r = .26$ ) followed by years in present position ( $r = .22$ ) and age ( $r = .16$ ). Educational level had a medium effect size and the other three variables had a small effect size. A higher percentage of the most effective teachers taught senior high only as compared to the least effective teachers (56.4% to 26.7%) while higher percentages of the least effective teachers taught junior and senior high respectively (25.6% to 40.0%), and junior high only (17.9% to 33.3%).

Table 1

*Means and Correlations of Teacher Agreement With Selected Philosophical Concepts.*

Concepts		Teachers		<i>r</i>
		Most	Least <sup>2</sup>	
Vocational agriculture should be developed and conducted as part of educational systems.	<i>M</i>	5.667	5.333	.30
	<i>SD</i>	.577	.802	
	<i>n</i>	39	30	
Vocational agriculture should be unique in its instructor qualifications.	<i>M</i>	5.395	5.033	.23
	<i>SD</i>	.638	1.245	
	<i>n</i>	38	30	
Vocational agriculture should be unique in its student goals.	<i>M</i>	5.308	4.967	.23
	<i>SD</i>	.694	1.129	
	<i>n</i>	39	30	
Vocational agriculture should be responsive to the needs of the individual for the skills of citizenship.	<i>M</i>	5.333	5.067	.22
	<i>SD</i>	.737	.740	
	<i>n</i>	39	30	
Vocational agriculture should provide a time commitment of sufficient length and intensity to provide instruction important to the successful entrance of the student into the chosen occupation or entrepreneurship.	<i>M</i>	5.205	4.933	.22
	<i>SD</i>	.570	.944	
	<i>n</i>	39	30	
Vocational agriculture should provide a time commitment of sufficient length and intensity to provide instruction important to the successful advancement of the student within the chosen occupation or entrepreneurship.	<i>M</i>	5.077	4.800	.22
	<i>SD</i>	.623	.925	
	<i>n</i>	39	30	
Vocational agriculture should relate to the productivity of people in terms of their willingness to produce efficiently.	<i>M</i>	5.436	5.200	.19
	<i>SD</i>	.598	.925	
	<i>n</i>	39	30	
Vocational agriculture should cultivate and nurture public support at all program levels.	<i>M</i>	5.436	5.200	.19
	<i>SD</i>	.640	.887	
	<i>n</i>	39	30	
Vocational agriculture should be available for youth at the high school level.	<i>M</i>	5.744	5.600	.17
	<i>SD</i>	.498	.563	
	<i>n</i>	39	30	

Table 1 continued

Concepts		Teachers		r
		Most	Least <sup>2</sup>	
Vocational agriculture should be unique in its facility and equipment needs for instruction.	M	5.308	5.067	.16
	SD	.766	1.081	
	n	39	30	
Vocational agriculture should be responsive to the needs of the individual for developing a positive attitude towards learning.	M	5.385	5.200	.15
	SD	.673	.847	
	n	39	30	
Vocational agriculture should be responsive to the needs of the individual for the skills of communication.	M	5.205	5.067	.11
	SD	.656	.980	
	n	39	30	
Vocational agriculture should provide education for choice of an agricultural occupation through career motivation, career orientation, and career exploration.	M	5.282	5.133	.11
	SD	.759	.937	
	n	39	30	
Vocational agriculture should be developed and conducted using an advisory group consisting of individuals representing business and industry in the occupational area in which the program is being offered.	M	5.000	4.833	.11
	SD	.761	1.085	
	n	39	30	
Vocational agriculture should consider the competencies of the individual student when programs are established.	M	4.820	5.233	-.29
	SD	.914	.817	
	n	39	30	
Vocational agriculture should balance the quantity of programs with employment patterns at the local, state, and national levels -- in that order.	M	4.842	5.067	-.14
	SD	.945	1.015	
	n	38	30	
Vocational agriculture should focus on preparing individuals for work.	M	5.231	5.400	-.13
	SD	.842	.814	
	n	39	30	
Vocational agriculture should consider the needs of society when programs are established.	M	5.077	5.241	-.13
	SD	.774	.786	
	n	39	29	

Table 1 continued

Concepts		Teachers		<u>r</u>
		Most	Least <sup>2</sup>	
Vocational agriculture should consider the interests of the individual student when programs are established.	M	5.103	5.267	-.13
	<u>SD</u>	.821	.785	
	<u>n</u>	39	30	
Vocational agriculture should provide individuals with the capacities to continue to learn and transfer their skills to meet the changing job requirements of the agricultural sector.	M	5.256	5.400	-.12
	<u>SD</u>	.677	.814	
	<u>n</u>	39	30	
Vocational agriculture should be available for individuals at the adult level.	M	5.103	5.233	-.10
	<u>SD</u>	.788	.953	
	<u>n</u>	39	30	

Note. Concepts chosen for this table were those having at least a small effect size of .1 or greater. Means are based on extent of agreement with 1 representing strongly disagree and 6 representing strongly agree.

Most = teachers judged as being the most effective.

<sup>2</sup>Least = teachers judged as being the least effective.

Table 2  
Means and Correlations of Teacher Agreement With the Factors Into Which the Philosophical Concepts Were Grouped.

Factors		Teachers		<u>r</u>
		Most	Least <sup>2</sup>	
Vocational agriculture should respond to individual needs for non-occupation-specific training.	M	5.357	5.267	.11
	<u>SD</u>	.428	.635	
	<u>n</u>	38	30	
Vocational agriculture should be a unique educational program.	M	5.289	5.072	.20
	<u>SD</u>	.490	.871	
	<u>n</u>	38	30	
Vocational agriculture should prepare individuals for jobs existing in industry.	M	5.132	5.278	-.13
	<u>SD</u>	.717	.661	
	<u>n</u>	38	30	

Table 2 continued

Factors		Teachers		<u>r</u>
		Most	Least <sup>2</sup>	
Vocational agriculture should provide education to allow people to change occupations.	<u>M</u>	5.200	5.213	-.01
	<u>SD</u>	.554	.594	
	<u>n</u>	39	30	
Vocational agriculture should be integrated into the school and community.	<u>M</u>	5.487	5.344	.19
	<u>SD</u>	.422	.521	
	<u>n</u>	38	30	
Vocational agriculture should provide relevant occupational training to enable students to reach occupational goals.	<u>M</u>	5.103	4.897	.20
	<u>SD</u>	.509	.757	
	<u>n</u>	39	29	
Vocational agriculture should be available for those at the postsecondary and adult levels.	<u>M</u>	5.141	5.250	-.09
	<u>SD</u>	.734	.858	
	<u>n</u>	39	30	
The needs and opportunities of society should be considered when establishing vocational agriculture programs.	<u>M</u>	5.128	5.190	-.06
	<u>SD</u>	.695	.687	
	<u>n</u>	39	29	
Vocational agriculture should focus on the occupational productivity of people.	<u>M</u>	5.256	5.144	.11
	<u>SD</u>	.590	.709	
	<u>n</u>	39	30	
The interests and competencies of individual students should be considered when vocational agriculture programs are established.	<u>M</u>	4.961	5.250	-.24
	<u>SD</u>	.747	.716	
	<u>n</u>	39	30	

Note. Teachers responded to the individual concepts which made up each of these factors. They did not respond to the factors themselves. Means are based on extent of agreement with 1 representing strongly disagree and 6 representing strongly agree.

Most = teachers judged as being the most effective.

<sup>2</sup>Least = teachers judged as being the least effective.

#### Research Question Number 4

What is the relationship between selected demographic variables and teacher agreement with the philosophical statement adopted by the Agricultural Education Division, AVA?

Correlation coefficients calculated between each of the demographic variables of educational level, age, total years of teaching experience, and years in current position with overall agreement with the philosophy of the profession indicated that none of the variance in agreement could be explained by the demographic variables.

### Conclusions

The analysis and interpretation of the findings in this study support the following conclusions.

1. The philosophy adopted by the Agricultural Education Division, AVA does not contain the beliefs most likely to distinguish between the most and least effective teachers.

2. The teachers participating in the study agreed with the philosophy and key concepts adopted by the profession.

3. Additional education is a better predictor of teacher effectiveness than either age, experience or agreement with any of the specific concepts adopted by the profession.

### Recommendations

Based on the findings and conclusions of this study, the following recommendations are made.

1. Research is needed to determine what other beliefs are held by vocational agriculture teachers and how those beliefs are related to teacher effectiveness.

2. Research is needed to determine what factors other than beliefs are related to teacher effectiveness.

3. Research is needed to determine if there are differences in the way most and least effective teachers implement their beliefs.

4. Research is needed to determine how education contributes to teacher effectiveness and influences teacher beliefs.

5. The philosophy of the profession should emphasize that effective agricultural education programs depend on the teacher taking personal responsibility for and being committed to those programs.

6. Longitudinal research is needed to determine what beliefs students have just before entering teaching, whether those beliefs can be used to predict long-term success, and how those beliefs change over time.

7. Research is needed to determine if beliefs stated or written by teachers can be reliably discovered through actual observation.

### Discussion

This research suggests that while teacher beliefs do have some impact on teacher effectiveness, much of the difference among teachers is caused by factors other than the beliefs investigated in this study. The philosophy adopted by the profession was accepted by all of the teachers regardless of whether they were identified as the most or least effective teachers and specific parts of that philosophy only explained small amounts of the variance between the most and least effective teachers. The beliefs that were the subject of many of the philosophical debates identified in the literature such as job specific training versus more generalized career preparation did emerge in the factor analysis, but did not distinguish clearly between the most and least effective teachers. This does not mean that the beliefs of the profession are unimportant to effective teaching. The fact that all of the teachers seemed to agree with the philosophy indicates otherwise. It simply means that agreeing with the philosophy adopted by the profession is not sufficient in and of itself to ensure teacher effectiveness.

More research not only needs to be conducted on the beliefs that are actually controlling and motivating teacher actions, but also on the ability of those teachers to implement the beliefs that they hold.

The relationship of additional education to more effective teaching was supported by this research, but the specifics of that relationship are still a mystery. Perhaps if teacher educators could discover exactly what beliefs and skills are essential to effective teaching, the relationship between educational level and teacher effectiveness would be much stronger.

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