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Profile of the Effective Vocational Agriculture Teacher

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Educators have long desired to discover valid and reliable criteria which could be used to distinguish the effective from the less effective teacher. Research attempting to identify valid and reliable teacher effectiveness criteria has been conducted since the late 1880's. Only during the last two decades has evidence been provided which links some teacher behaviors to student achievement. Reviews of teacher effectiveness research such as those provided by Kash and Borich (1982), The School Improvement Model Project (Blackmer, Brown, Pinckney and Walker, 1981), Manatt (1982), and Medley (1979) have given researchers a solid base upon which to proceed with future teacher effectiveness studies.

With increasing pressure being asserted on secondary vocational teachers, due in part to the resurgence of the "back to basics movement" (National Commission on Excellence in Education, 1983), the time is right to begin efforts to identify effective vocational agriculture teachers and the behaviors which differentiate them as being more effective. As practiced today, the identification of effective teachers is not necessarily based on sound, research-supported criteria. Effective vocational agriculture teachers, for example, have been identified as being effective based largely on the testimony of expert opinion or personal experience. Until efforts are made to identify behaviors and characteristics of the effective vocational agriculture teacher, based on research-supported criteria, there is little that can be done to improve the effectiveness of vocational agriculture teachers.

Purpose and Objectives

The purpose of this study was to profile the effective vocational agriculture teacher by identifying distinguishing behaviors and characteristics using selected teacher effectiveness criteria. The specific objectives of this research were to:

1. Determine effectiveness groups (high and low) of vocational agriculture teachers from 12 north central states using research-supported effectiveness criteria.

2. Identify behaviors which distinguish vocational agriculture teachers who respond most like established criteria for effective teachers.

3. Identify demographic characteristics associated with vocational agriculture teachers who respond most like criteria for effective teachers.

Procedures

Vocational agriculture teachers from twelve north central states (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) served as the population

for the study. After consulting with Baker (Statistics Laboratory at Iowa State University), a systematic sample of 330 teachers was selected from the 1986 Agriculture Teachers Directory (Henry, 1986) from the population of 3212 teachers. Another 220 teachers were systematically selected as substitutes to be used in cases of nonresponse from the original sample of 330 teachers. Only substitutes needed to replace nonrespondents were used in the study. Substitution guidelines as provided by Chapman (1983) were strictly adhered to in the study.

The study utilized descriptive survey methodology. An instrument consisting of 40 teacher behavior statements classified under five teacher performance areas was developed to obtain the information needed to identify distinguishing behaviors of effective vocational agriculture teachers. The five teacher performance areas were: (a) productive teaching techniques; (b) structured class management; (c) positive interpersonal relationships; (d) professional responsibilities; and (e) personal characteristics. Each of the 40 teacher behavior statements required the respondent to answer using any whole number from one (never) to nine (always) based on their use of the behavior in their actual teaching practices. The scale had additional descriptors as follows: 3 (rarely), 5 (sometimes), and 7 (usually). The 40 teacher behavior statements were developed using research-supported teacher effectiveness criteria (Blackmer, Brown, Pinckney, & Walker, 1981) and Manatt (1982). The instrument was field tested for clarity and validity utilizing twelve teachers not included in the study.

The instrument was mailed to all teachers, including the substitutes. Sixty-three percent of the instruments were properly completed and returned by the original sample of 330 teachers. No follow-up attempt was undertaken to increase the response rate. One hundred twenty-two substitutes were used to replace nonrespondents from the original sample group, yielding a substitution rate of 37%. A 10% sample of nonrespondents was randomly selected for a follow-up to determine if significant differences existed among respondents, nonrespondents and substitutes. The groups were compared according to their responses to the teaching practices studied. An analysis of variance revealed no significant differences among the three groups.

Analysis of Data

Group means, standard deviations and frequencies were computed on all items. *T*-tests were calculated to test for significant differences between teacher effectiveness groups formed in the study when comparing their mean response scores to the teacher behavior statements. The statistical procedures utilized in the study were designed to identify common behaviors and characteristics inherent with effective vocational agriculture teachers and not to demonstrate causality among variables. A reliability alpha coefficient (Cronbach's Alpha) was calculated for the 40 teacher behavior statements as a group (.82) along with reliability coefficients for each of the five teacher performance areas. The reliability coefficients for the five teacher performance areas ranged from .62 to .79. An alpha level of .01 was used to set the confidence limits for the responses received from the first instrument relating to the 40 teacher behavior statements. An alpha level of .05 was used to set the confidence limits for comparisons involving demographic variables in the second instrument.

Results

A major assumption involved with satisfying the first objective of the study, which sought to determine effectiveness groups of vocational agriculture teachers, was that effective teachers use more of the effective teacher behaviors to a higher degree than do less effective teachers. Thus, the responses given by the respondents to the 40 teacher behavior statements served as the basis for determining the teacher effectiveness groups identified in the study.

For each respondent, a total response score was calculated by adding together the response to the 40 teacher behavior statements. Negatively correlated behavior statements were recoded to align all responses in a positive direction. The total response score for each respondent had a possible range of between 40 and 360 based on a response range of one (never) to nine (always) for each of the 40 individual statements. Actual response scores for the 330 selected respondents ranged from 182 to 313. Since the distribution of total response scores was found to be normally distributed, all total response scores located plus or minus one or more standard deviations from the group mean total response score would serve as the cut-off points for the two (high and low) teacher effectiveness groups identified by the study. Through this procedure, the group considered to be highly effective included total response scores ranging from 282 to 313. The group of teachers whose total response scores were located one or more standard deviations below the group mean score had total response scores ranging from 182 to 237. The high and low teacher effectiveness groups which resulted from this procedure formed the core sample used to meet objectives two and three.

Objective two sought to identify teacher effectiveness behaviors which distinguished the effective vocational agriculture teacher from the less effective. The responses to the 40 teacher behavior statements provided by the 49 respondents in each of the high and low teacher effectiveness groups were used to identify any distinguishing teacher effectiveness behaviors between the groups.

The 40 teacher behavior statements were classified under five teacher performance areas (Table 1). As expected, the high teacher effectiveness group had significantly higher mean response scores for all five of the teacher performance areas when compared to teachers identified in the low group. The three performance areas having the largest significant mean score differences were: productive teaching techniques (t = -23.64); positive, interpersonal relationships (t = -16.46); and organized, structured class management (t = -12.96). The results support the assumption that vocational agriculture teachers who use effective teaching behaviors to high degree do so across the realm of teacher performance areas.

Individual analysis of the responses to the 40 teacher behavior statements contained in the five teacher performance areas found significantly different mean scores existed between the groups for 35 of the 40 statements. The six statements having the largest mean score differences between groups included: (a) feel enthusiastic towards their work; (b) seek ways to motivate students by providing opportunities for successful learning activities; (c) seek ways to involve parents of students in program related activities; (d) keep informed about your students with special health needs; (e) help students locate supplementary materials for subject matter content; and, (f) use long range plans to guide the improvement of their program.

Table 1
Means, Standard Deviations and t-values of Teacher Effectiveness Groups by Teacher Performance Areas

Performance area		Group Low	Group High	t-value
		(N = 49)	(N = 49)	
Productive teaching techniques	Mean	5.12	6.92	
	SD	0.41	0.36	-23.62
Organized, structured class management		5.40	6.90	
		0.56	0.62	-12.96
Positive interpersonal relationships		5.77	7.43	
		0.52	0.51	-16.46
Professional responsibilities		6.76	7.89	
		0.79	0.60	-8.15
Personal characteristics		6.45	7.89	
		0.80	0.49	-10.91

Note: Repsonse scale represented a continuum from 1 (never used the behaviors) to 9 (always used the behaviors).
t-value of 2.575 significant at .01 alpha level.

All five of the statements for which mean scores between groups were not significantly different were negatively correlated teacher behavior statements. An example of a negatively correlated teacher behavior statement used in the study is, Use lecture to teach most of the course information. This behavior suggests that a majority of the low effectiveness group teachers were not less effective because they were using negatively correlated teacher behaviors in their teaching practices, but rather that they were using the positive teacher behaviors to a lesser degree than were the high teacher effectiveness group members.

The third objective of the study sought to identify demographic characteristics associated with the effective vocational agriculture teacher. A total of 20 selected demographic questions were used to accomplish this objective. A questionnaire was developed and mailed to the 103 teachers who comprised the high (N=53) and low (N=50) teacher effectiveness groups. This information sought responses for selected demographic variables associated with each teacher. Ninety-eight (95% response rate) usable instruments were returned by this group.

From the data received, 12 demographic variables differentiated between teachers considered to be highly effective and those considered to be less effective (Table 2).

Variables that did not differentiate between teacher groups were: (a) years of vocational agriculture completed; (b) preparation time during school day; (c) number of students enrolled in vocational agriculture; (d) percent of work load related to FFA activities; and (e) number of secondary school students enrolled in the school.

Table 2
Means, Standard Deviations, and t-values of Significantly Different Demographic Variables by Teacher Effectiveness Groups

Variable		Groups Low	Groups High	t-value
		(N = 49)	(N = 49)	
Age of the respondents	Mean	34.37	39.96	
	SD	9.54	10.17	-2.81
Years of teaching experience		11.00	14.60	
		9.09	9.48	-1.97
Years of farm residence		19.41	24.41	
		8.97	10.79	-2.49
Years of residence at present location		11.69	16.92	
		10.10	12.48	-2.28
Percent of students having active SOE programs		70.10	81.73	
		29.53	27.20	-2.03
Professional organizational memberships		3.92	4.92	
		2.19	2.68	-2.49
Civic organization memberships held by respondents		1.10	2.10	
		1.20	1.39	-3.82
Leadership positions held within civic organizations		1.27	2.90	
		2.49	3.42	-2.70
Hours(sem.) of formal education since completing B.S. degree		21.77	30.54	
		19.91	17.64	-2.30
Workshops particpated in during the last two years		3.39	4.73	
		2.19	2.56	-2.80
Field days attended during the last two years		1.92	3.25	
		2.02	2.12	-3.17

Note. Response scale represented a continuum from 1 (never used the behaviors) to 9 (always used the behaviors).
t-value of 1.96 significant at .05 alpha level.

Conclusions and Recommendations

The findings indicate that effective vocational agriculture teacher behaviors and characteristics can be determined based on the use of research-supported teacher effectiveness criteria. A profile of the high teacher effectiveness group was developed utilizing 31 behavior items from the five teacher performance areas and twelve demographic variables. The profile follows:

Productive Teaching Behaviors The effective agriculture teacher:

1. Develops course activities which reflect "lifelike" situations, relating current lessons to past lessons.
2. Utilizes learning activities which are designed to achieve predetermined objectives for the course.
3. Motivates students by providing successful learning activities at each student's ability level, yet challenges students to higher scholastic expectations.
4. Evaluates his/her performance and accepts honest feedback from students for continued improvement.
5. Very often provides written comments on exams to facilitate student learning.

6. Will sometimes need to further explain assignments to students even after directions are given.
7. More often than not will design educational activities for the class as a whole rather than for individual students.
8. Very often seeks the advice of experts in the subject matter he/she teaches.
9. Almost always helps students locate supplementary materials to subject matter content being covered in class.

Organized, Structures Class Management The effective agriculture teacher:
1. Utilizes long range plans to guide improvement of the vocational agriculture program.
2. Establishes a given set of rules and procedures to manage student behavior.
3. More often than not will allow for student input when establishing classroom rules and procedures.
4. Purposely adjust and rearranges the classroom to provide for a variety of learning activities within the classroom.
5. Confronts students when they are not doing their assigned task.
6. Presents information on the blackboard which can be read by all students.
7. Sometimes uses textbooks to provide most of the printed information given to students.

Positive Interpersonal Relationships The effective agriculture teacher:
1. Encourages friendly and respectful relationships with students, feeling students within his/her class can be trusted.
2. Rarely uses sarcasm in the classroom.
3. Constructively criticizes students for further educational improvement.
4. Keeps informed about students needing special assistance while willingly provides time to any student needing help.
5. Seeks ways to involve parents of students into program related activities.
6. Shares teaching ideas and methods with other teachers in the school.
7. Sometimes categorizes students by their needs (cultural, academic, intellectual, etc.).
8. Recognizes students for their efforts which are worthy of praise.

Professional Responsibilities The effective agriculture teacher:
1. Demonstrates that he/she is a responsible person by completing duties in a timely manner.
2. Keeps abreast of new developments within his/her profession through participation in workshops, field days and seminars.
3. Rarely by-passes school policy even if conditions warrant the action.

Personal Characteristics Behavior The effective agriculture teacher:
1. Usually displays personality traits such as humor and patience which promote positive interaction with students.
2. Almost always feels enthusiastic towards his/her work.
3. Feels capable of handling any of the challenges associated with his/her work and copies easily with the changing situations occurring within the classroom environment.

Profile of Demographic Characteristics The effective agriculture teacher:
1. Is older than the average vocational agriculture teacher and has a proportionate amount of teaching experience.

2. Is presently living on a farm or has lived on a farm, usually for more than 10 years.
3. Has been a resident of the community in which he/she teaches for at least four years.
4. Usually has had a minimum of at least one year of high school vocational agriculture, but it is not significant if he/she did not complete any vocational agriculture.
5. Teaches in a school which serves mostly rural students or a combination of rural and urban students.
6. Teaches in a program which offers year-long or a combination of year-long and semester courses.
7. Usually teaches some type of adult class or group.
8. Spends approximately 22 percent of his/her total work load on FFA related activities.
9. Has a high percentage of students with active supervised occupational experience programs.
10. Holds membership in five professionally related organizations and usually holds at least one leadership position.
11. Is a member of two civic organizations or clubs and usually has had at least one leadership position.
12. Continues to complete formal education classes throughout his/her teaching career.

It is recommended that the profile be used for vocational agriculture teacher self-evaluations or by school administrators who supervise vocational agriculture teachers to improve the effectiveness of their teachers. The study should be replicated in other areas of the United States to determine whether the results are consistent with vocational agriculture teachers as a whole. Researchers conducting similar investigations should continue to seek current research findings which reflect the latest developments concerning criteria on teacher effectiveness.

As a final point, it should be emphasized that not all teachers considered to be effective would be expected to conform to any one specific behavior or characteristics described within the study. Exceptions to the generalizations would be expected. The combined effect of behaviors and characteristics causes teachers to be profiled as effective.

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