

CHARACTERISTICS OF EFFECTIVE AGRICULTURE TEACHERS

T. Grady Roberts, Assistant Professor
Texas A & M University
James E. Dyer, Associate Professor
University of Florida

Abstract

The purpose of this Delphi study was to develop a consensus listing of those characteristics that comprise an effective agriculture teacher. Panel members consisted of agriculture teachers, county-level administrators, state FFA supervisory staff, and university faculty in agricultural education. The panel identified 40 characteristics of an effective agriculture teacher that were categorized into the areas of instruction, FFA, SAE, community relations, marketing, professionalism/professional growth, program planning/management, and personal qualities. Characteristics identified in the "personal qualities" category that are requisite for effective teachers warrant examination and possible remediation by current teacher education programs.

Introduction/Theoretical Framework

Today's secondary educational environment is much different than it was decades ago. Requirements for promotion and graduation are much more strict, including more required classes and higher standards for promotion. Current students often do not have the luxury of enrolling in elective classes for personal enlightenment, as their schedules are filled with courses required for college admittance. Beyond a highly regimented course of study, today's students must also deal with the pressures of taking and passing high-stakes standardized tests. The pressures placed on students to do well on these tests have been compounded by a recent trend in many states to use these test scores to grade schools. All of these factors are indicative of an increased emphasis on student and teacher performance.

Another recent phenomenon in education is accountability for student performance. Standardized tests and school grades are often used as indicators of performance for both schools and individual teachers. Consequently, schools are consistently looking for methods to maximize student performance. One

approach used by schools to aid in increasing student performance is to hire and retain effective teachers under the assumption that effective teachers will lead to greater student learning and thus greater performance. Given the high-stakes placed on these performance indicators, schools often do not have the luxury to hire teachers of unknown potential with the hopes that they will eventually develop into effective teachers. Expectations are placed on all teachers, including agriculture teachers, to immediately contribute to advancing test scores. Unfortunately, identifying effective teachers is not always an easy task, especially with the teacher shortage faced by many academic areas.

It is unlikely that any administrator deliberately hires ineffective teachers, or that teacher educators seek to prepare ineffective teachers. Yet, anecdotal evidence suggests that there are ineffective teachers in many schools, in a variety of subject matter areas, including agricultural education. So why does this phenomenon occur, particularly in agricultural education? Perhaps it is because there is little agreement between teacher educators about the specific coursework and experiences required to prepare teachers to be effective (McLean &

Camp, 2000). Although the *American Association of Agricultural Educators* undertook the task of developing National Standards for Teacher Education in Agriculture, one has to examine only a few agricultural teacher education programs to verify the plethora of different models for preparing agricultural education teachers still in use (AAAE, n.d.). Regardless, the National Standards for Teacher Education in Agriculture provide a sound model for programmatic decisions about preparing effective teachers in an agricultural teacher education program. However, missing from this model are specific outcomes or characteristics that preservice agricultural education teachers must possess as a result of completing such a program.

If the characteristics requisite for being an effective agriculture teacher were known, teacher educators could make appropriate decisions in developing preservice students into effective teachers. Subsequently, administrators could make sound decisions in hiring these graduates with the knowledge that they will be effective agriculture teachers. So what are the characteristics of an effective agriculture teacher?

Rosenshine and Furst (1971) identified teacher behavior variables that contributed to teaching effectiveness including: variability, enthusiasm, task-oriented, providing students opportunities to learn, using student ideas, amount of criticism (negatively correlated), using structuring comments, types of questions, probing student responses, and level of difficulty of instruction. Young (1990) identified a broader list of characteristics including the ability to plan and execute lessons, monitor student learning and behavior, conduct interesting and focused lessons based on a variety of methods, and maintain rapport with students and peers.

Suydam (1983) indicated that effective teachers let pupils know they are concerned about their achievement; offer encouragement; involve students through questions and discussion; minimize waste time, allowing few distractions and interruptions; establish and follow simple, consistent rules; monitor pupils' behavior carefully; move around the classroom; and

give clear directions. Richardson and Arundell (1989) noted that an effective teacher gives a variety of examples, properly plans lessons, is knowledgeable of subject matter, and knowledgeable of student learning.

Several studies examined agricultural education teachers specifically. Miller, Kahler, and Rheault (1989) identified five common performance areas for effective agriculture teachers: productive teaching behaviors (which includes designing life-like situations and activities); organized, structured class management; positive interpersonal relationships; professional responsibilities (which includes completing duties in a timely manner); and personal characteristics (which includes displaying personality traits such as humor and patience). Larsen (1992) and Miller et al. (1989) identified classroom management and classroom organization as influencing the effectiveness of agriculture teachers. Likewise, student motivation (Foster & Finley, 1995; Larsen, 1992; Miller et al., 1989; Newcomb, Warmbrod, & McCracken, 1993), the ability to identify student needs (Lockaby & Vaughn, 1999), and recognition of students for their achievements (Lockaby & Vaughn, 1999; Luft & Thompson, 1995; Miller et al., 1989) were also identified as characteristics of effective teachers.

According to Luft and Thompson (1995), students identified an effective agriculture teacher as having the following characteristics: showing enthusiasm for teaching, serving as good role models for students, being committed to helping students learn, showing their commitment to teaching by belonging to professional teacher organizations, enjoying teaching, being self confident and poised, being prompt and on time, and being neatly dressed and well groomed. Foster and Finley (1995) reported that effective agriculture teachers were individually strong in human relation and personal attitudes, adept at conflict resolution, highly motivated, committed to personal feelings, utilized good public relation skills, accepted by co-workers, demonstrated leadership and cooperation, possessed good human relation skills, and demonstrated good professional etiquette.

Whereas much research exists on the components of effective classroom instruction (Richardson & Arundell, 1989; Suydam, 1983; Young, 2000), additional research explores elements of effective instruction unique to agricultural education (Foster & Finley, 1995; Luft & Thompson, 1995; Miller et al., 1989). However, missing from the literature base are the characteristics of effective agriculture teachers in terms of their responsibilities in conducting a total agricultural education program (beyond instruction, FFA, and SAE).

The responsibility of preparing future effective agriculture teachers to conduct a total agricultural program primarily resides with teacher educators at universities with agricultural education programs. Teacher educators develop coursework and design programs to effectively achieve this outcome. In doing so, they must often rely on their own personal experiences, as there is limited research-based information on the characteristics of effective agriculture teachers in the total school program (Miller et al., 1989). By identifying those characteristics, teacher educators can focus on developing those skills in their students.

Purpose

The purpose of this study was to develop a consensus listing of those characteristics that comprise an effective agriculture teacher. With this knowledge teacher educators should be able to design a teacher preparation program to develop these characteristics in their graduates. To accomplish this purpose, the study focused around two objectives. The first objective was to identify the characteristics of an effective agriculture teacher using an expert panel of agriculture teachers, county level administrators, state FFA supervisory staff, and university faculty in agricultural education. The second objective was to categorize the characteristics of effective agriculture teachers into a working model.

Methods/Procedures

This statewide study (in Florida) used a modified Delphi technique to identify those

characteristics deemed to be common among effective agriculture teachers. According to Stufflebeam, McCormick, Binkerhoff, and Nelson (1985), the Delphi technique is effective in obtaining consensus among a purposively selected group of experts. Delp, Thesen, Motiwalla, and Seshadri (1977) described the Delphi technique as a group process used to solicit, collate, and direct expert responses toward reaching consensus. Helmer (1966) described the Delphi technique as a method of securing and refining group opinions and substituting computed consensus for an agreed-upon majority opinion.

The expert panel consisted of two university teacher educators, two state FFA supervisory staff members, four county-level agricultural administrators, and 28 agriculture teachers ($n=36$). Teacher educators, county-level agricultural administrators, and state FFA supervisory staff were selected based upon their positional expertise. Teachers selected for the panel included individuals who were National Board Certified, teacher association officers, a National Agriscience Teacher Finalist, advisors of chapters awarded the National Chapter Award, state FFA Association Board members, and student teaching internship supervisors. Dalkey (1969) stated that the reliability was greater than .80 when Delphi group responses numbered greater than 13.

The researchers used a series of three mailed questionnaires. Moore (1987) noted that mailed questionnaires are typical in the Delphi technique. The first round asked the open-ended question, "What are the characteristics of an effective agriculture teacher?" This question was used to generate an array of response categories that were used to produce items for a second round questionnaire. Responses were categorized into a list of 33 characteristics.

In the second round, panel members were asked to rate each of the 33 characteristics identified in the first round using a five point Likert-type scale (1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly Agree), and to revise the list of characteristics to more accurately reflect their opinions. From the results of the second round and

comments listed by respondents, a third round was developed that separated and expanded the list of characteristics to 42 items.

The third round sought to arrive at consensus. During this round panel members were presented individual and group results from the second round and asked to indicate if they agreed or disagreed with each of the 42 statements. The researchers set the agreement level a priori at 80%. All items which did not receive agreement from 80% of the panel respondents were removed from the list of characteristics. As noted by McCampbell and Stewart (1992), most Delphi studies reach consensus at the third round. Consensus was achieved on 40 of the characteristics at this level so no further rounds were deemed necessary.

To produce more usable results, the 40 characteristics were divided into categories using a constant comparative method (Glaser & Strauss, 1967). According to Glaser and Strauss, categories can be developed by the researcher or emerge from

the data. The latter method was used in this study by placing each item into a category with similar characteristics.

Analysis of Data

Data were analyzed using descriptive statistics. Data collected using Likert-type scales were treated as interval data and reported as means and standard deviations for classification purposes as outlined by Clason and Dormody (1994). Nominal data were reported using frequencies and percentages. Categorization of the characteristics was accomplished using a constant comparative method as described above.

Results

The first objective of this study sought to identify the characteristics of an effective agriculture teacher. The first round used an open-ended question resulting in a response rate of 83%. Thirty-three characteristics were identified from the 30 respondents (see Table 1).

Table 1
Round One: Characteristics of Effective Agriculture Teachers (n=30)

Characteristic	Responses
Encourages, counsels, and cares for students	30
Has a sound knowledge of FFA, actively advises the FFA chapter, and effectively prepares students for Career Development Events (CDE)	23
Knowledge of subject matter	22
Effectively determines students needs, plans for instruction, evaluates students,	19
Well organized and excellent time management skills (good planner)	17
Uses a variety of teaching techniques and has knowledge of teaching & learning theory	17
Good community relations	17
Puts in extra hours (dedicated)	15

Characteristic	Responses
Has a sound knowledge of Supervised Agricultural Experience (SAE), actively supervises SAEs, and encourages students to have SAEs	14
Works well with other teachers and administrators	13
Is involved in professional organizations, displays positive, professional image (sets the example) & demonstrates leadership	11
Good Communication and people skills	10
Desire for professional improvement (life long learner)	9
Effectively manages finances, grants, and special projects	8
Effectively manages, maintains, and improves labs	8
Honest, moral, & ethical	8
Effectively manages student behavior	7
Enjoys teaching and has positive attitude towards teaching profession	7
Enthusiastic	7
Works well with parents	6
Motivates students	6
Motivated, self-confident, resourceful, and open minded	5
Love of agriculture (passionate for subject matter)	5
Can work on many tasks at one time (flexible) and is a Jack of all trades	4
Creative	4
Incorporates total school curriculum into the agriculture program	4
Is innovative in using technology in the classroom	4
Works well with alumni and advisory groups	3
Understanding, supportive spouse & family	2
Can develop and implement a public relation program	1
Effectively recruits new students	1
Continually manages, operates and evaluates program	1
Takes actions to prevent burnout	1

Thirty-one of the 36 panel members responded in round two for a response rate of 86%. In this round respondents were asked to rate the 33 characteristics identified in the first round on a Likert-type scale, and/or to make changes in the statements as

necessary. Results of round two are displayed in Table 2. Because it was decided a priori that all items with means equal to or greater than 4.0 would be retained for round three, all 33 items from this round were retained.

Table 2

Round Two: Level of Agreement with Characteristics of Effective Agriculture Teachers (n=31)

Characteristic	<i>M</i>	<i>SD</i>
Encourages, counsels, and cares for students	4.81	.40
Enjoys teaching and exhibits a positive attitude towards the teaching profession	4.74	.44
Is honest, moral, & ethical	4.74	.44
Has a sound knowledge of FFA, actively advises the FFA chapter, and effectively prepares students for CDEs and other FFA activities	4.71	.53
Has a love of agriculture (passionate for subject matter)	4.71	.53
Motivates Students	4.71	.53
Is capable of solving problems and handling many different tasks at the same time	4.71	.53
Puts in extra hours; is dedicated to doing a good job	4.68	.48
Is enthusiastic	4.65	.49
Establishes and maintains good community relations	4.65	.61
Is motivated, self-confident, resourceful, and open-minded	4.65	.55
Effectively manages, operates and evaluates the agriculture program on a continuous basis	4.61	.62
Effectively manages student behavior; maintains discipline in class	4.61	.56
Maintains an effective public relations program	4.61	.67
Works well with others; has good communication skills	4.58	.56
Uses a variety of teaching techniques; is knowledgeable of teaching & learning theory	4.58	.67

Characteristic	<i>M</i>	<i>SD</i>
Effectively recruits new students	4.58	.67
Has a sound knowledge of SAE, actively supervises SAEs, and encourages students to have SAEs	4.55	.57
Works well with parents	4.52	.63
Has excellent knowledge of the subject matter	4.48	.72
Works well with other teachers and administrators in his/her school	4.48	.68
Effectively determines students needs, plans for instruction, evaluates students, and recognizes achievements	4.45	.72
Is creative	4.42	.72
Is innovative; uses technology in the classroom; adapts well to change	4.42	.62
Incorporates science and other areas of the school curriculum into the agriculture program	4.42	.81
Improves himself/herself professionally by seeking opportunities for continued learning	4.39	.72
Effectively manages, maintains, and improves laboratories	4.39	.67
Has an understanding and supportive spouse/family	4.39	1.02
Is involved in professional organizations, displays a positive/professional image, and demonstrates leadership in the profession	4.29	.94
Is well organized; has excellent time management skills	4.26	.86
Works well with alumni and advisory groups	4.19	.75
Takes actions to prevent burnout and to re-energize himself/herself	4.16	.86
Effectively manages finances, grants, and special projects	4.03	.98

Note. 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly Agree.

Based upon responses from round two, characteristics were revised and expanded to 42 items. Panel members were asked to provide a dichotomous indication of whether

they agreed or disagreed with each of these characteristics as a requirement for an agriculture teacher to be effective. To reach consensus, panel members were also asked

to provide comments if they disagreed with the characteristic, or if the characteristic could be further explained. Thirty-one of the 36 panel members responded in this round for an 86% response rate.

As indicated in Table 3, panel members identified 40 characteristics in this round that an effective agriculture teacher should possess. The level of consensus was established a priori at 80%. One hundred percent of the respondents agreed that an effective agriculture teacher cares for students; effectively plans for instruction; effectively evaluates student achievement; is

honest, moral, and ethical; has a sound knowledge of FFA, actively advises the FFA chapter, and effectively prepares students for CDEs and other FFA activities; communicates well with others; and effectively manages, maintains, and improves laboratories (see Table 3). All but one respondent agreed that effective agriculture teachers recognize achievements of their students; motivate students; have a love of agriculture; effectively manage student behavior; work well with other teachers, administrators, and parents; and effectively manage the agriculture program.

Table 3
Round Three: Level of Agreement with Characteristics (n=31)

Characteristic	Agree %
Cares for students	100.00
Effectively plans for instruction	100.00
Effectively evaluates student achievement	100.00
Is honest, moral, and ethical	100.00
Has a sound knowledge of FFA, actively advises the FFA chapter, and effectively prepares students for CDEs and other FFA activities	100.00
Communicates well with others	100.00
Effectively manages, maintains, and improves laboratories	100.00
Effectively recognizes achievements	96.67
Effectively motivates students	96.67
Has a love of agriculture (passionate for subject matter)	96.67
Effectively manages student behavior; maintains discipline in class	96.67
Works well with other teachers and administrators in his/her school	96.67
Works well with parents	96.67

Characteristic	Agree %
Effectively manages, operates and evaluates the Ag program on a continuous basis	96.67
Is motivated	93.55
Is resourceful	93.55
Has a sound SAE knowledge, actively supervises and encourages SAE projects	93.55
Puts in extra hours; is dedicated to doing a good job	93.55
Displays a positive/professional image	93.55
Encourages, counsels, and advises students	90.32
Effectively determines students needs	90.32
Enjoys teaching and exhibits a positive attitude towards the teaching profession	90.32
Uses a variety of teaching techniques	90.32
Incorporates science and other areas of the school curriculum into the agriculture program	90.32
Has excellent knowledge of the subject matter	90.32
Improves professionally by seeking opportunities for continued learning	90.32
Establishes and maintains good community relations	90.32
Effectively manages finances, grants, and special projects	90.32
Is innovative; uses technology in the classroom; adapts well to change	90.00
Is capable of solving problems and handling many different tasks at the same time	90.00
Is enthusiastic	87.10
Maintains an effective public relations program	87.10
Is self-confident	86.67

Characteristic	Agree %
Is knowledgeable of teaching & learning theory	83.33
Takes actions to prevent burnout and to re-energize himself/herself	83.33
Effectively recruits new students	80.65
Is well organized; has excellent time management skills	80.65
Has an understanding and supportive spouse/family	80.65
Works well with alumni and advisory groups	80.65
Is open-minded	80.00
Is creative	77.42
Is involved in professional organizations and demonstrates leadership in the profession	56.67

Note. Level of agreement set *a priori* at 80% to retain characteristic.

The second objective of the study sought to categorize the characteristics of effective teachers into a working model. In this model eight categories were identified as essential for agriculture teacher effectiveness. As indicated in Table 4,

characteristics identified in round three were categorized into instruction, FFA, SAE, community relations, marketing, professionalism/professional growth, program planning/management, and personal qualities.

Table 4
Categorized Characteristics of an Effective Agriculture Teacher

Category	Characteristic
Instruction	Effectively plans for instruction
	Effectively evaluates student achievement
	Communicates well with others
	Effectively recognizes achievements
	Effectively motivates students
	Has a love of agriculture (passionate for subject matter)
	Effectively manages student behavior; maintains discipline in class
	Encourages, counsels, and advises students

Category	Characteristic
Instruction	<p>Effectively determines students needs</p> <p>Uses a variety of teaching techniques</p> <p>Incorporates science and other areas of the school curriculum into the agriculture program</p> <p>Has excellent knowledge of the subject matter</p> <p>Is innovative; uses technology in the classroom; adapts well to change</p> <p>Is capable of solving problems and handling many different tasks at the same time</p> <p>Is knowledgeable of teaching and learning theory</p>
FFA	<p>Has a sound knowledge of FFA, actively advises the FFA chapter, and effectively prepares students for CDEs and other FFA activities</p>
SAE	<p>Has a sound SAE knowledge, actively supervises, and encourages SAE projects</p>
Community Relations	<p>Works well with parents</p> <p>Establishes and maintains good community relations</p> <p>Works well with alumni and advisory groups</p>
Marketing	<p>Works well with other teachers and administrators in his/her school</p> <p>Maintains an effective public relations program</p> <p>Effectively recruits new students</p>
Professionalism/ Professional Growth	<p>Puts in extra hours; is dedicated to doing a good job</p> <p>Displays a positive/professional image</p> <p>Enjoys teaching and exhibits a positive attitude towards the teaching Profession</p>

Category	Characteristic
Professionalism/ Professional Growth	Improves professionally by seeking opportunities for continued learning
	Takes actions to prevent burnout and to re-energize himself/herself
Program Planning/ Management	Effectively manages, maintains, and improves laboratories
	Effectively manages, operates and evaluates the agriculture program on a continuous basis
	Effectively manages finances, grants, and special projects
Personal Qualities	Cares for students
	Is motivated
	Is enthusiastic
	Is self-confident
	Has an understanding and supportive spouse/family
	Is honest, moral, and ethical
	Is open-minded
	Is well organized; has excellent time management skills
Is resourceful	

Conclusions, Implications and Recommendations

There were two objectives for this study, so two conclusions were drawn. The first objective of this study was to identify the characteristics of an effective agriculture teacher. Forty characteristics of effective agriculture teachers exist (see Table 3). The second objective was to categorize the characteristics of effective agriculture teachers into a working model. Characteristics of effective agriculture teachers can be categorized into instruction, FFA, SAE, building community

partnerships, marketing, professional growth/professionalism, program planning, and personal qualities.

Arguably, the characteristics identified in this study are all capable of being developed in teachers. However, a traditional classroom environment may not be best suited to do so. It is necessary to provide experienced-based learning opportunities to nurture the development of some of these characteristics, or to use some of these characteristics as selection criteria for admitting students to teacher education programs. Therefore, it is recommended that the agriculture teacher education programs

assess current students to determine which characteristics are lacking and which already exist.

The assertion that effective agriculture teachers possess certain personal qualities is supported by Luft and Thompson (1995), Miller et al. (1989), and Phipps and Osborne (1988). According to the results of this research, if we are to produce effective teachers, the personal qualities identified in this study must either exist prior to the time students enter teacher education programs, or be developed. In a study of teacher education programs, McLean and Camp (2000) reported that most of the teacher education programs they surveyed have curricula that address seven of the eight identified categories. Additionally, their study showed that none of the surveyed teacher education programs specifically contained subject matter aimed at developing the personal qualities identified by this study. Consequently, it is recommended that additional coursework or experiences that focus on the development of personal qualities be provided for preservice teachers.

Interestingly, the greatest number of characteristics was identified within the area of instruction. This verifies the continued belief that for teachers to be effective, they must first master those characteristics that guide instruction – that is, teaching methods/techniques. However, the eight categories of characteristics identified in this study are similar to the six programmatic areas reported in *A Guide to Local Program Success* (1997). These similarities empirically verify that being an effective agriculture teacher goes beyond classroom teaching.

Creating effective agriculture teachers is imperative for the long-term sustainability of agricultural education programs. Ineffective teachers are likely to become dissatisfied with teaching as a career and seek other employment opportunities (Bennett, Iverson, Rohs, Langone, & Edwards, 2002). Likewise, if ineffective teachers remain in classrooms, anecdotal evidence suggests that programs close and that countless students will not have an opportunity for education in agriculture.

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T. GRADY ROBERTS is an Assistant Professor in the Department of Agricultural Education at Texas A & M University, 104A Scoates Hall, 2116 TAMU, College Station, TX 77843-2116. E-mail: groberts@tamu.edu.

JAMES E. DYER is an Associate Professor in the Department of Agricultural Education and Communication at the University of Florida, 305 Rolfs Hall, P.O. Box 110540, Gainesville, FL 32611-0540. E-mail: jedyer@ufl.edu.