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Identifying the Characteristics of an Effective Agricultural Education Teacher: A National Study

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Abstract

The educational landscape in America is changing every day. The need for effective teachers, especially those in agricultural education, remains a high priority. This national study sought to identify the human capital (i.e., education, training, skills, and experiences) necessary for effective school-based agricultural education teachers. The modified Delphi approach consisting of award-winning agricultural education teachers, state staff, and National FFA Board of Directors in the 2017 calendar year was used to collect data. Three rounds of data collection resulted in 58 characteristics, across eight different categories, reaching consensus of agreement. Panelists agreed unanimously on 28 items. The top-rated item was, "understands student needs." The eight categories emerging from the data included: Instruction, FFA, SAE, Program Planning, Balance, Diversity and Inclusion, Professionalism, and Personal Dispositions. Personal Dispositions (n = 14) and Instruction (n = 14) were the two themes generating the greatest numbers of items. SAE (n = 1) was the category with the least amount of items generated. The results of this study serve as a call to action for a balanced program and personal life, refrain from working extra hours, and limiting one's involvement in the community as a leader.

***Keywords*:** effective teaching characteristics; human capital; school-based agricultural education teachers

Introduction

The landscape regarding today's education system is ever-changing. However, the one constant is the need for effective teachers in K-12 school systems (U.S. Department of Education, n.d.). The No Child Left Behind Act (Law 107-110, 2001) highlighted on the need for effective classroom instruction, as it aimed to provide highly qualified teachers in all K-12 classrooms nationwide (U.S. Department of Education, n.d.). Effective teaching is important because of its positive impact on student achievement (Farrell, 2015; McNeil & Popham, 1973; Rockoff, 2004; Steele, 2010). However, recruiting and retaining effective teachers nationwide continues to be a struggle in all disciplines of public schools (Boyd et al., 2012) including agricultural education (Smith, Lawver, & Foster, 2018).

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Similar to today's education system, agriculture also is changing rapidly. Agriculture has made a "radical transformation" over the last 100 years due to substantial population shifts from rural communities to more urban areas and the increased advancements and use of technology (McCalla, Castle, & Eidman, 2010, p. 335). These changes have impacted how agriculture is produced and used (McCalla et al., 2010) and have led to a citizenry that continues to be largely illiterate regarding agricultural practices and the industry as a whole (Kovar & Ball, 2013).

As a result of the changes in education and agriculture, the demand for agricultural education teachers continues to grow at an escalating rate (Smith et al., 2018). Unfortunately, the supply of certified school-based agricultural education (SBAE) teachers across the country is lacking. The National Supply and Demand Study for agricultural education teachers reported that 122 programs went unfilled in 2017 due to teacher shortage (Smith et al., 2018). The National FFA Organization (2017) identified the shortage of qualified teachers as being the greatest challenge facing agricultural education. The shortage has caused states to consider alternative certification as a route to assist in filling the gap (Bowling & Ball, 2018). The numbers of alternatively certified teachers in agricultural education has increased steadily since the turn of the century (Kantrovich, 2010; Smith et al., 2018). As a result, "school districts are hiring an unprecedented number of alternatively certified and non-licensed teachers to fill open positions due to demand" (Smith et al., 2018, p. 1).

Although alternative certification has been viewed as a potential solution to help ease the issue of the teacher shortage (Bowling & Ball, 2018), it only compounds the issue related to teacher quality (Robinson & Edwards, 2012). "Recruiting and preparing high-quality teachers to meet the demand of K-12 schools is a massive undertaking" (Boyd et al., 2012, p. 1043). Roberts and Dyer (2004) attributed much of the stressors in today's educational environment to strict graduation requirements, high-stakes testing, and school grades, all of which "are indicative of an increased emphasis on student and teacher performance" (p. 82). However, because "a quality program is the ultimate goal for many secondary agricultural education programs" (Sands, Sacquitne, Smalley, & Retallick, 2019, p. 14), and because agriculture and education are constantly changing, it is imperative that studies identifying effective teaching be conducted continually so that current and future students can receive the best education possible for the changing world (Edgar, Retallick, & Jones, 2016).

Effective teaching can be identified in various ways, as it is a multidimensional concept (Farrell, 2015). Steele (2010) discussed three characteristics associated with effective teaching, (1) nonverbal communication, (2) teacher self-efficacy, and (3) servant leadership. Darling-Hammond (2002) stressed that effective teachers are those who understand their students as individuals by building rapport and relationships with them. Effective teachers have been described as those who possess clarity, variability, enthusiasm, task-oriented business-like behavior, and the opportunity to learn the criterion material (Rosenshine & Furst, 1971). The United States Department of Education (n.d.) defined the attributes of an effective teacher as one who has passed the state certification examination(s), holds a minimum of a bachelor's degree, and demonstrates expertise within a given subject matter. Although, these characteristics are relevant to effective teaching, none of them speak directly to the roles of a SBAE teacher.

SBAE teachers' responsibilities revolve largely around the three-component model of agricultural education (National FFA, 2018), delivering a comprehensive program through "(1) classroom/laboratory instruction (contextual learning), (2) supervised agricultural experience programs (work-based learning), and (3) student leadership organizations (National FFA organization)" (National Council for Agricultural Education, 2012, para. 4). The concept of a comprehensive SBAE program involves a more in-depth analysis of effective teaching

characteristics, as identified by Roberts and Dyer (2004). Their study of SBAE teachers in Florida included eight categories consisting of: instruction, FFA, SAE, community relations, marketing, professionalism/professional growth, program planning/management, and personal qualities.

Davis and Jayaratne (2015) concluded that for SBAE teachers to be effective in the 21st century, they need a basic understanding of leadership, the ability to integrate math, reading, and writing into their curriculum, diverse teaching techniques, and the use of critical and higher order thinking skills. The National Council for Agricultural Education (2001) developed *The Nationwide Strategic Plan and Action Agenda for Agricultural Education: Reinventing Agricultural Education for the Year 2020*. The first goal within this strategic plan aimed to provide "an abundance of highly motivated, well-educated teachers in all disciplines, pre-kindergarten through adult, providing agriculture, food, fiber, and natural resources systems (AFNR) education" (National Council for Agricultural Education, 2001, p. 4). Through this initiative, The National Council for Agricultural Education (2001) hoped to develop SBAE teachers representing nationwide diversity, through preparation programs integrating AFNR principles, which rely on current research to help develop innovative curriculum integrating appropriate teaching strategies and technologies. "The responsibility of preparing future effective agriculture teachers to conduct a total agricultural program primarily resides with the teacher educators at universities with agricultural education programs" (Roberts & Dyer, 2004, p. 84). Although few, if any, guidelines exist to measure the quality of agricultural education programs (Dyer & Osborn, 1996), Bolton, Edgar, and Carter (2018) stated, "there is a need for further research to be conducted on secondary agricultural education programs to better define the characteristics of successful agricultural education programs" (p. 256). Therefore, the call for identifying and developing well-educated, effective SBAE teachers is clear. Considering the current educational landscape, what specific human capital (i.e., education, skills, training, and experiences) is necessary to be an effective SBAE teacher?

Theoretical/Conceptual Framework

The study was undergirded using the human capital theory. The human capital theory assesses the investment a person makes in his or her education, skills, experiences, and training (Becker, 1964; Little, 2003; Shultz, 1971; Smith, 2010; Smylie, 1996) for the purpose of employability (Becker, 1964). Human capital can be general or specific and can lead to employment in various sectors of particular industries (Smith, 2010). Acquiring additional human capital improves a person's competence for performing his or her trade or vocation (Heckman, 2000). Regarding the position a person has acquired, specific human capital is required and valued (Lepak & Snell, 1999). Therefore, it is imperative that human capital be applicable and targeted to a specific population within a particular industry or profession (Smith, 2010). Unfortunately, the literature regarding the specific human capital needed by secondary agricultural education teachers ". . . is lacking" (Robinson & Baker, 2013, p. 153). What is more, considering the educational climate regarding teacher certification, accessibility, and interest, or lack thereof, assessing the human capital needs of the current teaching core is an imperative task. Although human capital should be assessed and updated constantly (Spenner, 1985) regardless of discipline, it appears to be especially vital in education. Therefore, given the current climate of education and agriculture, what are the characteristics needed for an effective SBAE teacher?

Purpose of the Study

The purpose of the study was to identify the characteristics necessary for an effective SBAE teacher. The characteristics identified in this study will help to inform agricultural teacher educators of the specific education, skills, training, and experiences needed for preparing future SBAE teachers.

Two objectives directed the study:

1) Determine the characteristics necessary for an effective SBAE teacher, and
2) Categorize the characteristics based on needs of effective SBAE teachers.

Methods and Procedures

A modified Delphi approach was employed in this national study. Modified Delphi studies elicit the opinions of experts and then identifies consensus among them (Dalkey, 1969), providing descriptive information for the researchers. "In general, the Delphi procedures have three features: (1) anonymity, (2) controlled feedback, and (3) statistical group response" (Dalkey, Rourke, Lewis, & Snyder, 1972, pp. 20-21). Although the effective characteristics of SBAE teachers are observed often, they are seldomly verbalized (Stewart, 2001). Thus, the Delphi approach is a useful method in uncovering these non-verbalized findings (Stewart, 2001).

The study was based on previous research from Roberts and Dyer (2004) who identified the effective characteristics of agriculture teachers in Florida. Although their Delphi study was state-specific and addressed the needs of SBAE teachers in Florida, we were interested in conducting a national study to update the needs of SBAE teachers across the country. To determine the characteristics that equate to effective SBAE teachers, a panel of experts was identified. The initial panel included 20 SBAE teachers, five state supervisors of agricultural education, eight teacher educators in agricultural education, and two National FFA representatives (N = 35). Determining the criteria for selecting the appropriate panel of experts is vital to the success of a Delphi study (Dalkey, 1969). Experts have been defined as those who have acquired an advanced and holistic set of skills and work experience (Benner, 1982) in a specific discipline or domain. After consideration, we determined that our panel should consist of experts who had accumulated the human capital necessary to be effective at the highest level as SBAE teachers. As such, the criterion implemented for selecting our expert panel was current agricultural education teachers who had won a national professional teaching award for the 2017 calendar year. This criterion assumed two things: 1) that the teachers selected were currently active in their professional association and had relevant teaching experience; and 2) that their peers or an outside selection committee deemed them to be effective in their role as teachers based on their experiences. The national teaching awards we considered were those included in the American Association for Agricultural Education (AAAE), National Association of Agricultural Educators (NAAE), and the National Association of Supervisors of Agricultural Education (NASAE). In addition, one member of the National FFA board of directors was included. Each member of the panel of experts had a minimum of three years of teaching experience and represented 25 states, including California, Colorado, Delaware, Georgia, Idaho, Indiana, Iowa, Kansas, Minnesota, Missouri, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Washington, and Wisconsin. The identified panelists were invited to participate in the study via electronic mail. Regarding Delphi studies, Hsu and Sandford (2007) recommended that, "subjects should be highly trained and competent within the specialized area of knowledge" (p. 3). Because the panelists were award winners in their respective professional societies, they were considered to have expertise in the area of agricultural education.

Dalkey (1969) stated that when a Delphi has greater than 13 respondents, reliability of at least .80 is possible. Therefore, the researchers worked to achieve a limited amount of attrition to maintain the integrity of the panel of experts. The study employed Qualtrics, an online data collection survey instrument, for all three rounds. The instrument was delivered via email to all 35 identified experts. To help increase respondents, web and mobile survey design principles were employed based on the recommendations of Dillman's, Smyth's, and Christian's (2014) Tailored

Design Method, i.e., designing the questionnaire formatting for both computer and mobile device compatibility and employing three follow-up emails to participants for each round of the study. To ensure the instruments' face and content validity, a panel of experts was employed. Specifically, four agricultural education teacher preparation faculty with in excess of 80 years of teaching experience at the secondary and post secondary levels. In addition, one faculty member in research, evaluation, measurement, and statistics with expertise in survey research, statistical analysis, and instrument design at Oklahoma State University reviewed the instrument used in each round prior to its submission to panelists.

For Round One, the researchers asked one open-ended question, *What are the characteristics of an effective agricultural education teacher?* The goal of Round One, was to identify these key characteristics from the experts to include in Round Two. Round One resulted in 121 statements from 17 panelists for a 48.6% response rate. The research team analyzed the Round One data to develop the list of characteristics for Round Two, by condensing statements that were deemed to be redundant or duplicative. As a result of this process, the list of original statements was reduced from 121 to 68, which were submitted for Round Two where experts were asked to rate the 68 statements describing the characteristics of an effective SBAE teacher on a four-point scale of agreement: 1 = Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree. Characteristics in Round Two achieving a mean rating of 3.0 or higher with 100% agreement were considered as meeting consensus based on an a priori research decision. Round Two produced a 40.0% response rate, with 14 experts participating. Twenty-eight statements reached consensus in Round Two, reaching 100% agreement. The goal of Round Three was to arrive at consensus on the remaining 40 items. During Round Three, the panel was asked to *agree* or *disagree* with the 40 statements that did not meet consensus in Round Two and explain their rationale. This allowed the "panelists an opportunity to make further clarifications of both the information and their judgments of the relative importance of the items" (Hsu & Sanford, 2007, p. 3). An a priori rate of 85% agreement was set for meeting consensus in Round Three, meaning 85% of the panelists either agree or strongly agree with the statement. Any statements failing to reach 85% agreement from the panel were removed from the final list of characteristics. The procedural rounds continued until consensus was achieved, which in this case, was Round Three, which is an appropriate duration for a *typical* Delphi study to achieve consensus (Custer, Scarcella, & Stewart, 1999). Round Three had 17 panelists participate, resulting in a 48.6% response rate. The study had a small attrition rate between Round One and Round Two but experienced no attrition between Rounds Two and Three.

The final step was to categorize the characteristics reaching consensus amongst the panelists. A constant comparative method (Glaser & Strauss, 1967) was used to determine the themes that emerged from the characteristics. This approach focuses on the meaning of the items, allowing the researchers to group similar items emerging from the data, resulting in overarching categories with similar characteristics (Glaser & Strauss, 1967). To accomplish this, we collectively analyzed the characteristics identified by the panelists to ensure inter-rater reliability (Privitera, 2017), and grouped them into emerging categories.

Findings

Round One was designed to compile a comprehensive list of characteristics associated with being an effective SBAE teacher nationwide. One open-ended response question was featured asking experts, *What are the characteristics of an effective agricultural education teacher?* Round One resulted in 121 statements, from the 17 participants. Responses varied from single words, i.e., "FFA," "SAE," "Kind," "Trustworthy," to detailed statements, i.e., "Knowledgeable about agriculture and education," and "An effective ag teacher focuses on the classroom first by providing

engaging, relevant, and challenging facilitation of real-world activities toward establishing critical-thinkers."

In Round Two, 68 statements were sent to the nationwide panel of experts who rated each item on a four-point scale of agreement. An a priori mean rating of 3.0 or higher, with 100% agreement between the panelists was used to determine consensus on the characteristics. One hundred percent agreement provided the researchers with confidence to retain those characteristics, as all of the panelists agreed or strongly agreed with those items. Table 1 provides the outcomes, identifying the mean, standard deviation, and percentage of agreement for each characteristic identified by the panelists. Each characteristic is ranked according to mean score. Of the 68 statements, 28 reached consensuses of agreement in Round Two, achieving a mean rating of higher than a 3.00 and 100% agreement amongst the panel. The items ranged from "Understands student needs" (M = 3.86, SD = .36) to "Has the ability to say no" (M = 3.29, SD = .47). The highest rated item in Round Two with 100% agreement was, "Understands student needs" (M = 3.86, SD = .36). The lowest rated item with 79% agreement in Round Two was, "Is a leader in the community" (M = 3.00, SD = .88). Regarding percentage of agreement, the item, "Demonstrates a willingness to put in long hours" received the least amount of support (72%) from the panelists (see Table 1).

Table 1

Round Two: Level of Agreement with Effective Characteristics of SBAE Teachers (n = 14)

Identified Characteristic	*M*	*SD*	*% Agreement*[a]
Understands student needs.	3.86	.36	100
Is an advocate for all students.	3.79	.43	100
Shows integrity.	3.79	.43	100
Values students regardless of gender.	3.79	.43	100
Is engaging.	3.71	.61	92.9
Is a purposeful lifelong learner.	3.71	.47	100
Leads a balanced life.	3.71	.47	100
Values students regardless of economic status.	3.71	.47	100
Is fair.	3.64	.50	100
Demonstrates classroom management.	3.64	.63	92.9
Is student focused.	3.64	.50	100
Values students from all ethnic/racial groups.	3.64	.50	100
Is trustworthy.	3.64	.50	100
Is honest.	3.64	.50	100
Is passionate about agriculture.	3.57	.65	92.9
Cares about all students.	3.57	.65	92.9
Understands diversity.	3.57	.51	100
Uses the complete agricultural education model as a guide to programmatic decisions and practices.	3.57	.65	92.9
Shows empathy.	3.50	.52	100
Understands experiential education theory.	3.50	.65	92.9
Is motivated for student success.	3.50	.86	92.9
Is passionate about education.	3.50	.52	100

Table 1

Round Two: Level of Agreement with Effective Characteristics of SBAE Teachers (n = 14) Continued…

Is respectful.	**3.50**	**.52**	**100**
Provides a variety of learning opportunities to meet the needs of all students.	3.50	.52	100
Guides students to grow personally.	3.50	.52	100
Is knowledgeable about agriculture.	3.43	.65	92.9
Is dependable.	3.43	.51	100
Is a leader for students.	3.43	.51	100
Demonstrates pedagogical knowledge.	3.43	.51	100
Demonstrates adaptability.	3.43	.65	92.9
Is a good communicator.	3.43	.51	100
Instructs students through supervised agricultural experiences.	3.43	.85	92.9
Is a facilitator.	3.36	.63	92.9
Is culturally relevant.	3.36	.50	100
Is responsible.	3.36	.50	100
Is genuine.	3.36	.84	92.9
Is a dedicated professional.	3.36	.75	85.7
Understands there is not an award for all students, but that does not mean they are not valuable.	3.36	.75	85.7
Is relatable.	3.36	.50	100
Is first and foremost a classroom teacher.	3.36	.75	85.7
Demonstrates sound educational practices.	3.36	.50	100
Has agricultural education training.	3.29	.83	78.6
Has with-it-ness.	3.29	.73	85.7
Is creative in the classroom.	3.29	.61	92.9
Advises the FFA chapter.	3.29	.91	85.7
Is innovative.	3.29	.73	85.7
Has patience.	3.29	.61	92.9
Has the ability to say no.	3.29	.47	100
Is not just a facilitator of record keeping for degrees and awards.	3.29	.73	85.8
Is prepared for every class.	3.21	.43	100
Prepares students to be leaders.	3.21	.70	85.7
Is firm.	3.21	.70	85.7
Is engaged in an appropriate professional organization.	3.21	.70	85.7
Instructs students through the FFA.	3.14	.86	85.7
Is passionate about FFA.	3.14	.86	85.7
Is resourceful as an administrator of the program.	3.14	.86	85.7
Uses curriculum to plan for lessons.	3.14	.86	85.7
Is helpful.	3.14	.66	85.7

Table 1

Round Two: Level of Agreement with Effective Characteristics of SBAE Teachers (n = 14) Continued…

Is efficient.	**3.14**	**.66**	**85.7**
Is organized.	3.14	.66	85.7
Demonstrates great time management skills.	3.14	.86	85.7
Is kind.	3.14	.86	85.7
Is an advocate for public education.	3.07	.92	92.9
Demonstrates a willingness to put in extra hours.	3.07	.99	71.5
Is never afraid to ask for help.	3.07	.83	85.7
Is a hard worker.	3.07	.92	78.6
Advises the FFA officers.	3.07	.83	85.7
Is a leader in the community.	3.00	.88	78.6

Note. 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree; [a] = items marked as either a 3 or a 4.

Based on the responses from Round Two, 40 statements failed to reach 100% consensus amongst the panelist; therefore, those items were resubmitted to the panelists for consideration in Round Three where they were asked to agree or disagree with the statement. If the panelist disagreed with a statement, he or she was asked to provide rationale as to why. To determine which characteristics would be retained in Round Three, we established an 85% agreement level amongst panelists as our threshold prior to conducting the study. Table 2 identifies the characteristics for which the panelists were asked to agree or disagree. Of those, 30 statements reached consensus of agreement, resulting in 10 characteristics being removed from the final list of effective teaching characteristics of a secondary agricultural educator, including: "Is a facilitator," "Is firm," "Uses curriculum to plan for lessons," "Is efficient," "Demonstrates great time management skills," "Is kind," "Has with-it-ness," "Is creative in the classroom," "Is a leader in the community," and "Has agricultural education training" (see Table 2).

Table 2

Round Three: Agreement with Effective Characteristics (n = 17)

Identified Characteristic	*Agree*	*Disagree*	*% Agreement*[a]
Is engaging.	17	0	100
Demonstrates classroom management.	17	0	100
Cares about all students.	17	0	100
Is genuine.	17	0	100
Prepares students to be leaders.	17	0	100
Is helpful.	17	0	100
Is passionate about agriculture.	16	1	94.1
Uses the complete agricultural education model as a guide to programmatic decisions and practices.	16	1	94.1
Is motivated for student success.	16	1	94.1
Is knowledgeable about agriculture.	16	1	94.1

Table 2

Round Three: Agreement with Effective Characteristics (n = 17) Continued…

Is a dedicated professional.	**16**	**1**	**94.1**
Advises the FFA chapter.	16	1	94.1
Has patience.	16	1	94.1
Is engaged in an appropriate professional organization.	16	1	94.1
Is resourceful as an administrator of the program.	16	1	94.1
Instructs students through the FFA.	16	1	94.1
Is a hard worker.	16	1	94.1
Advises the FFA officers.	16	1	94.1
Understands experiential education theory.	15	2	88.2
Demonstrates adaptability.	15	2	88.2
Instructs students through supervised agricultural experiences.	15	2	88.2
Understands there is not an award for all students, but that does not mean they are not valuable.	15	2	88.2
Is first and foremost a classroom teacher.	15	2	88.2
Is innovative.	15	2	88.2
Is not just a facilitator of record keeping for degrees and awards.	15	2	88.2
Is passionate about FFA.	15	2	88.2
Is organized.	15	2	88.2
Is an advocate for public education.	15	2	88.2
Demonstrates a willingness to put in extra hours.	15	2	88.2
Is never afraid to ask for help.	15	2	88.2
Is a facilitator.	14	3	82.4
Is firm.	14	3	82.4
Uses curriculum to plan for lessons.	14	3	82.4
Is efficient.	14	3	82.4
Demonstrates great time management skills.	14	3	82.4
Is kind.	14	3	82.4
Has with-it-ness.	13	4	76.5
Is creative in the classroom.	13	4	76.5
Is a leader in the community.	13	4	76.5
Has agricultural education training.	12	5	70.6

Note. An a priori of 85% was set by the researchers to retain the characteristics.

Experts were asked to explain why they disagreed with the statements. Nine of the 10 statements not meeting consensus were because panelists did not feel as though they were "central to the theme," thought they were "less essential than the others," or they found themselves asking the question, "Could someone be an effective teacher without this?", and were able to answer, in the affirmative. The statement, "Has agricultural education training" (71%), received the lowest percentage of agreement, with experts explaining that numerous effective agricultural education teachers are alternatively certified and do not have formal pre-service agricultural education training.

The second objective sought to categorize the statements of effective SBAE teachers identified by the experts into appropriate categories. Eight categories emerged from the data. Table 3 identifies the eight categories, composed of 58 characteristics meeting consensus of agreement for effective agricultural education teachers. The eight categories include instruction, FFA, Supervised Agricultural Experiences, Program Planning, Balance, Diversity and Inclusion, Professionalism, and Personal Dispositions. Regarding items within the categories, Personal Dispositions (n = 17) and Instruction (n = 14) received the most identified characteristics, and SAE received the least (n = 1). In addition, FFA included six items, Program Planning included two items, Balance included four items, Diversity and Inclusion included nine items, and Professionalism included five items (see Table 3).

Table 3

Categorized Characteristics of Effective SBAE Teachers

Category	Identified Characteristic
Instruction	Is passionate about education.
	Provides a variety of learning opportunities to meet the needs of all students.
	Guides students to grow personally.
	Is a leader for students.
	Demonstrates pedagogical knowledge.
	Is a good communicator.
	Demonstrates sound educational practices.
	Is prepared for every class.
	Demonstrates classroom management.
	Understands experiential learning theory.
	Is motivated for student success.
	Is knowledgeable about agriculture.
	Is first and foremost a classroom teacher.
	Is innovative.
FFA	Advises the FFA chapter.
	Is not just a facilitator of record keeping for degrees and awards.
	Instructs students through FFA.
	Is passionate about FFA.
	Advises the FFA officers.
	Prepares students to be leaders.
Supervised Agricultural Experiences	Instructs students through supervised agricultural experiences.
Program Planning	Uses the complete agricultural education model as a guide to programmatic decisions and practices.
	Is resourceful as an administrator of the program.

Table 3

Categorized Characteristics of Effective SBAE Teachers Continued…

Balance	Leads a balanced life. Has the ability to say no. Is never afraid to ask for help. Demonstrates a willingness to put in extra hours.
Diversity and Inclusion	Understands student needs. Is an advocate for all students. Values students regardless of gender. Values students regardless of economic status. Values students from all ethnic/racial groups. Understands diversity. Is culturally relevant. Cares about all students. Understands there is not an award for all students, but that does not mean they are not valuable.
Professionalism	Is a purposeful lifelong learner. Demonstrates adaptability. Is a dedicated professional. Is an advocate for public education. Is engaged in an appropriate professional organization.
Personal Dispositions	Is fair. Is student focused. Is trustworthy. Is honest. Is passionate about agriculture. Is respectful. Shows empathy. Is dependable. Is responsible. Is relatable. Is genuine. Is a hard worker. Is organized. Is helpful. Has patience. Is engaging. Shows integrity.

Conclusions

The study aimed to determine the characteristics necessary for becoming an effective SBAE teacher, as identified by a nationwide panel of experts. A three-round Delphi approach was used to conduct the study and collect the data. Round One resulted in 121 identified characteristics, aligning with the three-component model of agricultural education (National FFA, 2018) as

statements from the panelist include characteristics associated with classroom instruction, FFA advisement, and SAE supervision (see Table 1). The characteristics also supported those identified by Rosenshine and Furst (1971), including clarity, variability, enthusiasm, task-oriented business-like behavior, and the opportunity to learn the criterion material and Darling-Hammond (2002) who emphasized the need to build rapport and relationships with students. In addition, various personal qualities or attributes and the need for an inclusive learning environment emerged as important attributes for an effective SBAE teacher. After conducting Rounds Two and Three, 58 characteristics achieved consensus of agreement at 85% or higher, a level we established prior to beginning the study.

Of the 58 characteristics, eight categories emerged to centralize the themes of the statements, including Instruction, FFA, SAE, Program Planning, Balance, Diversity and Inclusion, Professionalism, and Personal Dispositions (see Table 3). The eight emerging categories identify human capital needs (Smith, 2010) specific to SBAE teachers across the country. Roberts and Dyer (2004) also identified eight categories of effective SBAE teachers in their study, of which six align with our findings. Roberts and Dyer (2004) found community relations and marketing to be categories associated with effective SBAE teachers, whereas this study did not include those characteristics. Instead, the need for effective SBAE teachers to have balance and to understand the need for diversity and inclusion arose as additional categories. The new emerging categories validate the need to update the pertinent human capital within the SBAE teaching profession (Spenner, 1985).

Effective SBAE teachers need to possess certain personal qualities, as this study identified 17 characteristics that experts deemed vital, aligning with findings discussing the importance of these attributes from Luft and Thompson (1995) and Roberts and Dyer (2004). Although numerous characteristics reached consensus, 10 did not meet the set level of agreement, including characteristics related to personal qualities, community leadership, and creativity in the classroom. In addition, the item, "Has agricultural education training" had the least amount of agreement in Round Three at 71%. The current supply of SBAE teachers continues to include a greater number of alternatively certified teachers each year (Smith et al., 2018), which raises the question of how teacher preparation programs can and should address this trend? Requirements for alternative certification are different in each state (Ludlow, 2013); therefore, the training of alternatively certified teacher also is different. As the panelists reflected on the characteristic, "Has agricultural education training," they perceived that non-traditionally certified teachers can be effective, leading to the characteristics not being retained.

Based on these conclusions, it seems as though the panelists are calling for re-envisioning the workload and job description of SBAE teachers from the status quo. Preparing SBAE teacher aspirants to have a balanced program and personal life, refrain from working extra hours, and not becoming overly involved in the community as a leader appear to be *calls to action* for teacher education programs preparing future teachers. Although these findings potentially can offset teacher burnout and stress and lead to longevity and retention in the profession, what do they mean per the National FFA's call for local program of success (LPS)? There is little doubt that the pressing need for school administrators to fill vacant positions along with a decreasing supply of traditionally certified agricultural education teachers nationwide (Smith et al., 2018) has led to the hiring of alternatively or emergency certified teachers. Perhaps this influx of non-traditional routes to teacher certification has created an opportunity to re-envision the role of SBAE teachers going forward. Could it be that the roles and responsibilities of SBAE teachers being deemed effective is on the brink of change, as the landscape of SBAE teachers continues to become more diverse (Lawver, Foster, & Smith, 2018)?

Instruction and Personal Dispositions resulted in the greatest number of characteristics identified from the panelists. Based on the frequency of personal quality characteristics, the panelists deem them as necessary traits for effective SBAE teachers, i.e., fair, trustworthy, honest, responsible, genuine, organized, and patient. Additionally, classroom instruction was of great importance, aligning with nationwide accreditation standards (CCSSO, 2013; CAEP, 2016) established for SBAE teacher preparation programs. The concept of Diversity and Inclusion within education, and more importantly a complete SBAE program, emerged with nine statements reaching consensus. This finding aligns with Elliott (2018) who advocated the importance of being inclusive within SBAE programs.

Recommendations

The study presents numerous questions for further investigation for both research and practice. Regarding recommendations for research, future studies should assess which characteristics are teachable and which need to be identified prior to entering a teacher preparation program. The onus for acquiring the human capital necessary to be an effective SBAE teacher should be placed directly on the student. However, it should be the role of teacher preparation programs to establish assignments and experiences with benchmarks, and in the case of personal qualities, reflective activities that assist pre-service teachers in acquiring or monitoring said human capital. Specifically, we recommend that each state certifying institution consider identifying practicing teachers who align with the eight categories identified in this study. Once identified, teacher preparation programs should consider highlighting and using these individuals as models for their pre-service teachers as often as possible. Examples could consist of encouraging pre-service teachers to observe and shadow these mentors in their early field based experiences. These individuals should be invited to campus to share insight into the profession as guest lecturers. In addition, these individuals should be considered as cooperating teachers during pre-service teachers' student teaching internships. Finally, these individuals should be used to host professional development workshops for inservice teachers explaining how they developed their specific human capital to meet the eight criteria established in this study.

All 58 characteristics found in this study should be shared in their totality with pre-service teachers to clarify the definition of an effective SBAE teacher. Teacher education faculty should incorporate the findings of this study into their existing courses so that aspiring teachers can understand what is expected of them in the teaching profession.

The Personal Dispositions category included the highest frequency of items from the panelists, indicating it is a popular and important category, which appears to align well with the tenants of the human capital theory (Becker, 1964; Little, 2003; Shultz, 1971; Smith, 2010; Smylie, 1996). Although higher education institutions should emphasize qualities and ethics such as being fair, trustworthy, and honest as often as possible, such concepts can be difficult to teach. Ideally, these attributes should have been learned and exhibited prior to students' decisions to enter a teaching-related major. Therefore, perhaps a Personal Dispositions tool should be developed and used as a benchmark for evaluating students on these qualities prior to entering the teaching major. Such a benchmark could affect students' capacity to demonstrate the aspects necessary in this domain over time. During the teacher preparation program, teacher educators should consider ways in which pre-service teachers are exposed and allowed to learn these attributes. Case studies, personal stories, and examples of the characteristics comprising the Personal Dispositions category should be shared frequently and purposefully with aspiring teachers. Such examples of exposure might lead to the documentation of a person's Personal Disposition growth (or lack thereof) over time and serve as a data point for teachers regarding their capacity and expectation to be effective in the profession.

With the emergence of these eight categories reflecting components in addition to the current three-circle model of agricultural education (National FFA, 2018), perhaps it is time to reconsider agricultural education. Although the three-circle model has been useful in describing the program, perhaps a different model that is reflective of the additional characteristics necessary of an effective SBAE teacher should be considered. Such models have been attempted in the past (Hughes & Barrick, 1993), but have not been fully adopted by the profession. Why is that? Perhaps it is time to reinvision agricultural education and SBAE programs for the year 2020 and beyond by including the eight categories identified in this study.

Although instruments currently exist to measure effective teaching generally, such an instrument in SBAE had not been constructed prior to this study. Based on the findings of this study, it is recommended that the 58 items be used as an effective teaching instrument for SBAE teachers. In addition, this instrument should be used to measure pre-service students' growth as effective teachers. However, because attending to 58 items in eight different categories might be perceived as overwhelming and burdensome, a follow-up study should seek to validate this instrument to determine if the items can be condensed into a more manageable number. Once validated, the development of the effective teaching instrument in SBAE would allow research to be conducted on pre-service teachers' growth in each of the eight areas over the duration of their academic career prior to entering the teaching profession. Specifically, the instrument should assess students each year of their academic major beginning in their freshman year and ending at the conclusion of their student teaching internship. This would allow teacher preparation programs to target cohort-specific needs and develop the greatest potential in their prospective SBAE teachers. In addition, the instrument could be used as a needs assessment to help evaluate and develop in-service opportunities necessary for teachers to become more effective in their respective SBAE programs.

Discussion

Numerous states continue to experience teacher shortages. The topic of teacher burnout, stress, and dissatisfaction continues to be studied and discussed across the profession. In addition, higher rates of teachers are being employed from non-traditional routes. With the constant changes in agriculture and education, perhaps it is time to reconsider the job expectations of a SBAE teacher. The findings of this study seem to support this notion. Understanding these characteristics from a nationwide perspective allows teacher preparation programs to identify the needs of their students based on characteristics of effective teachers. If teacher education is going to thrive in the future, determining what constitutes teacher effectiveness must be considered, acknowledged, emphasized, and rewarded.

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