

Identifying the Characteristics of Effective School-Based Agricultural Education Teachers: A National Census Study

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Abstract

School-based agricultural education (SBAE) and its teachers must remain current with the times to be effective. Producing an abundance of competent, highly qualified, effective, SBAE teachers is an ongoing prerogative, and measuring effective teaching in SBAE is difficult due to the complexity and uniqueness of the demands of the position. The purpose of this study was to identify the self-perceived characteristics of effectiveness of SBAE teachers nationwide. The effective teaching instrument for SBAE teachers (ETI-SBAE), supported by a conceptual framework considering the potential factors impacting the effectiveness of SBAE teachers, was used to determine teacher effectiveness scores in this non-experimental, descriptive survey research study. All SBAE teachers across the country were included in the study's frame. After multiple rounds of data collection, 2807 SBAE teachers responded to the study with complete data sets. It was found that these teachers are diverse and have a variety of needs depending on the state from which they responded and their years of experience. A wide range of personal and professional characteristics were identified. Based on their composite sum effectiveness score, SBAE teachers who intended to remain in the profession through retirement were statistically significantly more effective than those who did not intend to retire or were still undecided.

Keywords: effective teaching; school-based agricultural education; teacher characteristics

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Introduction and Review of Literature

Effective teaching is a multidimensional (Farrell, 2015), elusive concept (Stronge et al., 2011). Yet, those deemed to be effective teachers have “fewer classroom disruptions, better classroom management skills, and better relationships with their students (Stronge et al., 2011, p. 349).

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Additionally, student success in the classroom can be tied to the effectiveness of the teacher (Kane & Staiger, 2008; Stronge et al., 2011).

Evaluating the effectiveness of SBAE teachers differs from that of other core subject area classroom teachers due to the unique and domain-specific workload and expectations (Roberts & Dyer, 2004). Generally, the workload of SBAE teachers is depicted by the National FFA Organization's (2015) three-component model of agricultural education, which includes competence in classroom and laboratory instruction, FFA, and SAE. The latter two are unique to SBAE and differ from teachers who might serve as a club advisor or sports coach, as they are integral aspects of the complete program, considered intracurricular in nature, and must be addressed comprehensively (National FFA Organization, 2015).

Unfortunately, the time commitment associated with overseeing these additional tasks can become daunting, time consuming, and all-encompassing for SBAE teachers (Torres et al., 2008). As such, they often struggle to balance time spent within each component of the model, which can lead to an imbalance of work and personal life (Boone & Boone, 2009; Lambert et al., 2011; Torres et al., 2008). What is more, beginning SBAE teachers often struggle with self-confidence, class preparation, and overcoming the reputation of their predecessor, while also being concerned with student discipline and facilities management (Boone & Boone, 2007). The workload and differentiation between SBAE teachers and other secondary school teachers (Harper et al., 1990) points to the need to establish criteria for what constitutes an effective SBAE teacher.

DiBenedetto et al. (2018) conducted a needs assessment of SBAE teachers, using published research in SBAE. The four overarching categories of their work included FFA, program, SAE, and skill, "which included FFA program management, developing public relations programs, program administration/general administrative tasks, SAE development/supervision, managing student behavior, and computer technology" (p. 67). In addition, preparing degree applications, developing instructional materials, teaching core content, managing and balancing time, fundraising, establishing advisory committees, working with special needs students, and teaching 21st Century skills were all identified as needs for SBAE teachers (DiBenedetto et al., 2018). Due to the workload and expectations, numerous studies have identified an inadequate work-life balance as an area of concern regarding SBAE teachers (Edwards & Briers, 1999; Murray et al., 2011; Myers et al., 2005; Torres et al., 2009). However, Blackburn et al. (2017) found teachers perceive themselves as leading a balanced life, and are generally satisfied with their chosen career, which results in high levels of self-efficacy.

The areas of need, concern, and contradiction within SBAE are culminated by the findings of Roberts and Dyer (2004) who found that to be an effective teacher in Florida, SBAE teachers needed to focus on instruction, FFA, SAE, community relations, marketing, professionalism/professional growth, program planning/management, and personal qualities. Eck et al. (2019) replicated the study on a national scale and identified 58 characteristics in eight categories. Those categories included instruction, FFA, SAE, program planning, balance, diversity and inclusion, professionalism, and personal dispositions. Balance and Diversity and Inclusion were the two new emerging categories from Eck et al. (2019), aligning with the needs of SBAE teachers established by DiBenedetto et al. (2018). The American Association for Agricultural Education (2017) endorsed six competency standards for SBAE teacher preparation programs, including pedagogical content knowledge, technical content knowledge, program planning, diversity, professionalism, and personal dispositions. These standards were not intended to be requirements for teacher preparation programs, but instead serve as a guide for enhancing potential competencies of 21st Century SBAE teacher candidates. The vast array of SBAE teacher needs and roles associated with the career, require a deeper assessment into the way they are evaluated. Although there are numerous differences associated with teacher effectiveness between K-12, CTE, and SBAE teachers, some factors remain consistent.

Parents, practitioners, and policymakers agree that the key to improving public education in America is placing highly skilled and effective teachers in all classrooms. Yet the nation still lacks a practical set of standards and assessments that can guarantee that teachers, particularly new teachers, are well prepared and ready to teach. (Darling-Hammond, 2010, p.1)

“At the heart of this line of inquiry is the core belief that teachers make a difference” (Wright et al., 1997, p. 57), all of which aligns with the need of a multidimensional (Farrell, 2015; Norris, 1980) and comprehensive evaluation tool for assessing effective teaching in SBAE.

Personal and Professional Characteristics of Effective SBAE Teachers

The number of years teaching SBAE, number of years in current position, and intent to retire as an SBAE teacher are potential factors impacting teacher effectiveness, as teacher efficacy and training needs vary based on them (Barrick et al., 1983; Layfield & Dobbins, 2002; Roberts & Dyer, 2004; Rocca & Washburn, 2006; Washburn et al., 2001). Generally speaking, SBAE teachers are satisfied with their career choice (Clark et al., 2014; Kitchel et al., 2012; Walker et al., 2004); however, SBAE teachers can be impacted by their social comparison with peers (Kitchel et al., 2012). When SBAE teachers choose to remain in the profession past retirement eligibility, it further validates their satisfaction with the career (Clark et al., 2014).

Retaining SBAE teachers continues to be a challenge facing the profession (Tippens et al., 2013). One hundred fifty-eight SBAE teachers retired in 2017, and an additional 510 left the teaching profession prior to retirement eligibility that same year (Smith et al., 2018). When assessing teachers across the country, K-12 teachers have varying levels of teaching experience, as 9.9% have less than three years, 28.3% have three to nine years, 39.3% have 10 to 20 years, and 22.5% have in excess of 20 years of classroom teaching experience (SASS, 2017).

Digging deeper into career tenure and the intention of SBAE teachers to remain in the profession, Tippens et al. (2013) found SBAE teachers who are satisfied with their career are unlikely to leave the classroom within the next five years, regardless of sex. The number one indicator of SBAE teachers' career satisfaction was their self-perceived level of effectiveness (Tippens et al., 2013). The mid-career phase is the pivotal point where SBAE teachers choose to either continue to engage or disengage from the profession (Day, 2008). SBAE teachers' perceived level of effectiveness can impact their career tenure and future intentions.

Part of the answer regarding career tenure may be in the size of the program SBAE teachers oversee. The number of teachers in an SBAE program have the potential to shape the type and delivery of the program related to the three-component model of agricultural education (National FFA Organization, 2015). For example, multiple teacher departments were found to have a more positive perception related to SAE programs than did single teacher programs (Swortzel, 1996). In addition to the number of teachers in an SBAE program, the number of students can play a role. SBAE programs vary in size from small rural schools with less than 20 students in the program to large multiple teacher departments with over 1000 students enrolled in SBAE (National Association of Agricultural Educators, 2019). The size of the SBAE program has the potential to impact SBAE teacher effectiveness (McKim et al., 2017; Wheeler & Knobloch, 2006; Whittington et al., 2006).

Personal attributes of SBAE teachers include age, sex (Rodriguez, 1997; Wolf, 2011), highest degree earned (McKim et al, 2017), and their geographical location (Birkenholz & Harbstreet, 1987; Washburn et al., 2001). The average age of teachers nationwide is 42.4, with 15% of teachers under the age of 30, 29% from 30 to 39, 27% between 40 and 49, 22% from 50 to 59, and the remaining 8% being 60 and older (SASS, 2017). Nationally, 77% of K-12 teachers are female and 23% are male (SASS,

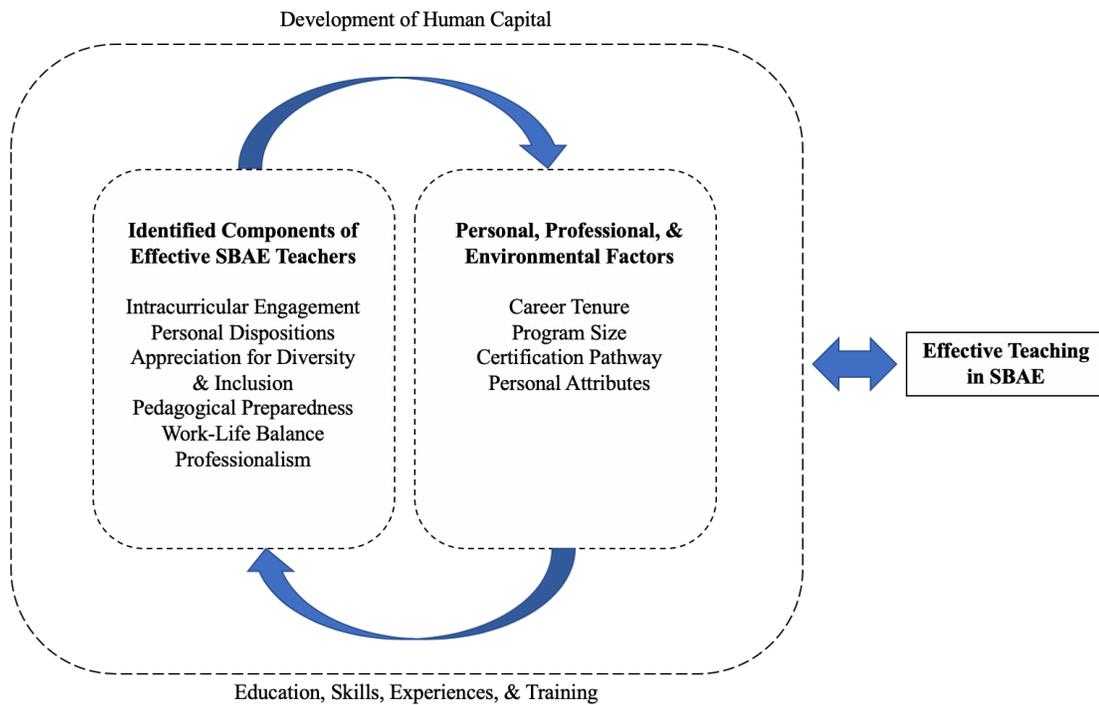
2017). Regarding secondary schools only, the national percentage of male teachers increased to 36% (SASS, 2017).

Theoretical/Conceptual Framework

“It is now recognized that there are almost as many learning styles as there are learners. Today’s teacher is faced with the difficult task of developing a multidimensional system to evaluate [their] teaching effectiveness” (Marks, 1976, p. 1). Darling-Hammond (2010) discussed the growing interest in advancing beyond traditional measures of teacher quality (i.e., certification, preparation program, and experience) to develop a comprehensive evaluation system that can be used to evaluate teacher effectiveness for educational stakeholders. Because the demands, expectations, and workload of SBAE teachers are unique to the job (Roberts & Dyer, 2004), a specific evaluation metric was needed. Therefore, the effective teaching model (Figure 1) was established for conceptualizing effective SBAE teachers.

Figure 1

The Effective Teaching Model for SBAE Teachers



The development of the effective teaching model, in addition to the effective teaching instrument for SBAE teachers (ETI-SBAE) were part of a larger study that sought to validate an instrument to measure SBAE teaching effectiveness. There is no direct formula to prepare, support, and evaluate effective teachers (Steele, 2010), especially considering the diverse landscape of SBAE teachers nationwide. The ETI-SBAE (Eck et al., 2020) implemented in this study provides a starting point to allow stakeholders across the country an opportunity to prepare, support, and evaluate its teachers on what is often considered an elusive concept (Stronge et al., 2011). To help facilitate this

opportunity, the conceptual model (Figure 1) includes the alignment of the identified components of effective SBAE teachers with the six components of the ETI-SBAE. Additionally, the model takes into account personal, professional, and environmental factors as necessary elements within human capital development needed by SBAE teachers. Understanding of the conceptual frame will provide guidance to human capital development of SBAE teachers through the use of the ETI-SBAE.

Purpose of the Study

The purpose of this study was to identify the self-perceived characteristics of SBAE teacher effectiveness. Two research objectives guided the study: (1) Describe the personal and professional characteristics (i.e., sex, age, certification pathway, highest degree earned, state of employment, number of students, number of SBAE teachers, number of years teaching SBAE, number of years in current position, and intention to retire as a teacher of SBAE) of SBAE teachers; and (2) Compare the effectiveness of SBAE teachers based on personal and professional characteristics.

Methods and Procedures

This non-experimental study employed a descriptive, survey research design. The population of interest included all SBAE teachers across the country ($N = 12690$) (Smith et al., 2018). A distribution frame was developed by the research team for 48 States including 9121 individual email address, along with State Agricultural Education listservs for 15 States. The email addresses and listserv access were established by the research team on a state-by-state basis. Four U.S. States/Territories failed to participate. Using the study's frame, participants were sent an electronic mail invitation to participate in the study as well as the ETI-SBAE to assess their self-perceived effectiveness as SBAE teachers. In all, 3339 instruments were returned, resulting in a 28.2% response rate. After excluding incomplete instruments and missing data, the sample size was reduced to a valid response rate of 2807 (23.7%).

The ETI-SBAE was used as the instrument for this study as it was deemed as a valid and reliable instrument to measure SBAE teacher effectiveness by Eck et al. (2020). The 26-item instrument spanned six components (i.e., Intracurricular Engagement, Personal Dispositions, Appreciation for Diversity and Inclusion, Pedagogical Preparedness, Work-Life Balance, and Professionalism) with an acceptable Cronbach's alpha of 0.87 (Nunnally, 1978). In total, the instrument included 26 items (Table 1) related to characteristics of an effective SBAE teacher (Eck et al., 2020) and 10 questions related to personal and professional characteristics (i.e., sex, age, certification pathway, highest degree earned, state of employment, number of students, number of SBAE teachers, number of years teaching SBAE, number of years in current position, and intention to retire as a teacher of SBAE).

Table 1*Effective Teaching Instrument for SBAE Components and Item Descriptions (26 items)*

Component Title	Item	Corresponding Item Description
1. Intracurricular Engagement	IE_1	I instruct students through FFA.
	IE_2	I advise the FFA officers.
	IE_3	I advise the FFA chapter.
	IE_4	I facilitate record keeping for degrees and awards.
	IE_5	I am passionate about FFA.
	IE_6	I instruct students through SAEs.
	IE_7	I use the complete agricultural education 3-component model as a guide to programmatic decisions.
2. Personal Dispositions	PD_1	I am trustworthy.
	PD_2	I am responsible.
	PD_3	I am dependable.
	PD_4	I am honest.
	PD_5	I show integrity.
	PD_6	I am a hard worker.
3. Appreciation for Diversity and Inclusion	AD_1	I value students regardless of economic status.
	AD_2	I value students of all ethnic/racial groups.
	AD_3	I value students regardless of sex.
	AD_4	I care about all students.
	AD_5	I understand there is not an award for all students, but that does not mean they are not valuable.
4. Pedagogical Preparedness	PP_1	I demonstrate classroom management.
	PP_2	I demonstrate sound educational practices.
	PP_3	I am prepared for every class.
5. Work-Life Balance	B_1	I have the ability to say no.
	B_2	I lead a balanced life.
	B_3	I am never afraid to ask for help.
6. Professionalism	P_1	I have patience.
	P_2	I show empathy.

Note. IE = Intracurricular Engagement, PD = Personal Dispositions, AD = Appreciation for Diversity and Inclusion, PP = Pedagogical Preparedness, B = Work-Life Balance, P = Professionalism.

Each of the 26 items was rated on a 4-point, Likert-type scale of personal strengths and weaknesses ranging from 1 (very weak) to 4 (very strong). Data were analyzed using SPSS Version 23 and included descriptive and inferential statistics, reliability estimations, and exploratory factor analysis using principal component analysis. In a study of this magnitude, non-response error is one of the

greatest concerns with only a 28.2% response rate. To address this issue, 30 randomly selected non-respondents were sent an additional email requesting participation one week after the close of the data collection period. This effort to collect data from non-respondents resulted in an additional response from 20 of the 30 who were contacted. The data collected from the non-respondents were then compared to those of the respondents to assess potential differences (Miller & Smith, 1983). No statistically significant differences existed between the two groups (i.e., non-respondents and respondents) based on age, sex, or composite effectiveness scores. Therefore, the data collected in the study are deemed to be representative of SBAE teachers nationwide.

To assess teacher effectiveness, a composite score of effectiveness based on a sum of the responses to the 26-items was calculated for each participant. The self-reported rankings from each participant were utilized to calculate the total effectiveness sum score using Microsoft Excel. Each of the items had scores ranging from 1 (very weak) to 4 (very strong), which was summed to determine the overall effectiveness score of the participant. McDonald (1997) determined summative scores that are equally weighted provide optimal estimates when analyzing components. Therefore, per McDonald's (1997) recommendation, participant effectiveness scores were weighted equally across all items.

The effectiveness scores were analyzed to determine the impact of personal and professional characteristics. With one dependent variable and 13 independent variables (see Objective 1), a factorial analysis of variance (ANOVA) was implemented (Field, 2009). SPSS output from the factorial ANOVA was analyzed to identify interactions, potential main effects, and simple main effects of the data (Field, 2014). Additionally, *post hoc* analyses were conducted to further interpret the statistically significant main effects (Field, 2014).

Findings

Findings for Research Question One: Describe the Personal and Professional Characteristics of the Participants

The study resulted in responses from 2807 SBAE teachers ranging in age from 21 to 72 years old, with 51.2% being female (Table 2). These SBAE teachers represented 45 states and ranged in program size from eight students in a single-teacher program to 1502 students in a 13-teacher program. Half of the SBAE teachers (50.5%) have not earned more than a bachelor's degree, while 44.3 % have earned a master's degree, and 1.2% have completed a terminal degree. Over one-third (34.7%) of the respondents were in their first five years of teaching SBAE, while 19.5% were between years six and 10, 11.6% between 11 and 15, 10.4% between 16 and 20 years, 6.4% between 21 and 25, and 11.9% with 26 or more years of teaching SBAE. The majority (60.2%) of SBAE teachers in this study intend to retire as an SBAE teacher. Table 2 outlines the personal and professional characteristics of all participating SBAE teachers nationwide.

Table 2*Personal and Professional Characteristics of Participants (n = 2807)*

Characteristic		<i>n</i>	%
Sex	Male	1239	44.1
	Female	1436	51.2
	Other	6	0.2
	Prefer to not respond	8	0.3
	Did not respond	118	4.2
Age	21 to 29	829	29.5
	30 to 39	743	26.5
	40 to 49	516	18.4
	50 to 59	434	15.4
	60 to 69	142	5.1
	70 +	4	0.1
	Did not respond	139	5.0
Certification Pathway	AgEd BS	1750	62.4
	AgEd MS	366	13.0
	Alternatively Certified	548	19.5
	Emergency Certified	24	0.9
	Not Certified	17	0.6
	Did not respond	102	3.6
Highest Degree Earned	Bachelor's Degree	1417	50.5
	Master's Degree	1244	44.3
	Doctoral Degree	35	1.2
	Did not respond	111	4.0
State	Alabama	46	1.6
	Arizona	50	1.8
	Arkansas	52	1.9
	California	206	7.3
	Colorado	59	2.1
	Connecticut	21	0.7
	Delaware	18	0.6
	Florida	77	2.7
	Georgia	38	1.4
	Idaho	28	1.0
	Illinois	123	4.4
	Indiana	71	2.5
	Iowa	61	2.2
	Kansas	99	3.5
	Kentucky	52	1.9
	Louisiana	49	1.7
	Maine	6	0.2
	Maryland	17	0.6
	Massachusetts	19	0.7

Table 2*Personal and Professional Characteristics of Participants (n = 2807), Continued...*

	Minnesota	85	3.0
	Mississippi	27	1.0
	Missouri	133	4.7
	Montana	26	0.9
	Nebraska	47	1.7
	Nevada	23	0.8
	New Hampshire	7	0.2
	New Jersey	10	0.4
	New Mexico	33	1.2
	New York	57	2.0
	North Carolina	131	4.7
	North Dakota	20	0.7
	Ohio	111	4.0
	Oklahoma	181	6.4
	Oregon	47	1.7
	Pennsylvania	1	0.1
	Rhode Island	2	0.1
	South Carolina	35	1.2
	South Dakota	27	1.0
	Tennessee	20	0.7
	Texas	417	14.9
	Utah	34	1.2
	Washington	20	0.7
	West Virginia	22	0.8
	Wisconsin	56	2.0
	Wyoming	17	0.6
	Did not respond	126	4.5
Program (# of Students)	Size 1 to 20	60	2.1
	21 to 40	208	7.4
	41 to 60	293	10.4
	61 to 80	291	10.3
	81 to 100	274	9.8
	101 to 150	530	18.9
	151 to 200	251	8.9
	201 to 250	193	6.9
	251 to 300	141	5.0
	301 to 400	142	5.1
	401 to 500	97	3.5
	501 to 600	42	1.5
	601 to 700	23	0.8
	701 to 800	13	0.5
	801 to 900	6	0.2
	Greater than 900	22	0.8
	No Response	221	7.9
SBAE Teacher(s)/Program	1	1269	45.2

Table 2*Personal and Professional Characteristics of Participants (n = 2807), Continued...*

	2	726	25.8
	3	302	10.8
	4	168	6.0
	5	67	2.4
	6	29	1.0
	7	29	1.0
	8	10	0.4
	9	5	0.2
	10 or more	10	0.4
	No Response	192	6.8
Years Teaching SBAE	1	236	8.4
	2	235	8.4
	3	171	6.1
	4	181	6.4
	5	151	5.4
	6 to 10	547	19.5
	11 to 15	326	11.6
	16 to 20	291	10.4
	21 to 25	179	6.4
	26 to 30	155	5.5
	31 to 35	105	3.7
	36 or more	75	2.7
	No Response	155	5.5
Years in Current Position	1	431	15.4
	2	373	13.3
	3	262	9.3
	4	232	8.3
	5	179	6.4
	6 to 10	468	16.7
	11 to 15	260	9.2
	16 to 20	192	6.8
	21 to 25	107	3.8
	26 to 30	85	3.0
	31 to 35	44	1.6
	36 or more	34	1.2
	No Response	140	5.0
Intent to Retire in SBAE	Yes	1690	60.2
	No	215	7.7
	Undecided	808	28.8
	No Response	94	3.3

Findings for Research Question Two: Compare the Effectiveness of SBAE Teachers Based on Personal and Professional Characteristics

Respondents were asked to identify their personal and professional characteristics, i.e., sex, age, certification pathway, highest degree earned, state of employment, number of students, number of SBAE teachers, number of years teaching SBAE, number of years in current position, and intention to retire as a teacher of SBAE. These characteristics were then used to compare against the composite sum effectiveness score, based on the 26-item validated instrument. The maximum possible effectiveness score was 104 points, as the instrument allowed respondents to select a value on a 4-point, Likert-type scale of personal strengths and weaknesses ranging from 1 (very weak) to 4 (very strong).

Normality was assessed, with all responses being normally distributed. Levene’s test statistic for homogeneity of variance was not statistically significant ($p > .05$) indicating that the assumption of homogeneity of variance was met; therefore, a factorial ANOVA was conducted using SPSS, with the composite sum effectiveness score serving as the dependent variable and the 10 personal and professional characteristics serving as independent variables. No statistically significant interactions were present within the factorial Analysis of Variance (ANOVA). Therefore, main effects were tested, resulting in two statistically significant main effects; (1) SBAE teachers’ intent to retire $F(4, 2253) = 17.13, p < .01$; and (2) State of SBAE employment $F(42, 2253) = 1.68, p < .01$.

The additional eight personal and professional characteristics yielded non statistically significant main effects; (1) Sex $F(3, 2253) = 2.66, p = .05$; (2) Age $F(5, 2253) = 0.82, p = .54$; (3) Years teaching SBAE $F(11, 2253) = 0.56, p = .86$; (4) Years in current position $F(11, 2253) = 0.93, p = .51$; (5) Highest degree earned $F(2, 2253) = 0.65, p = .53$; (6) Certification pathway $F(4, 2253) = 1.01, p = .40$; (7) Number of students $F(15, 2253) = 1.35, p = .17$; (8) Number of SBAE teachers $F(9, 2253) = 1.13, p = .34$. To further understand the statistically significant main effects, post-hoc analyses were conducted. A Bonferroni post-hoc analysis was used, as it is known to be effective in controlling Type I error (Field, 2009). The post-hoc analysis with a 95% confidence interval resulted in a statistically significant difference based on the SBAE teachers’ intent to retire (Table 3).

Table 3

Multiple Comparisons Mean Differences of Teacher Effectiveness Based on Intent to Retire (n = 2370)

Intent to Retire	Yes	No	Undecided
Yes	-		
No	-2.49**	-	
Undecided	-2.41**	0.08	-

Note. * = $p < .05$; ** = $p < .01$. Values identify the mean difference between groups.

When considering the effect of the state in which the SBAE teacher is employed, there was a statically significant main effect $F(42, 2253) = 1.68, p < .01$, resulting in a post-hoc analysis with a 95% confidence interval. Three states resulted in statistically significant differences with other states. Massachusetts teachers were found to be statistically significantly ($p < .05$) less effective based on the composite sum effectiveness scores than SBAE teachers in 18 other states (Alabama, Arizona, Arkansas, California, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Missouri, Nebraska, North Carolina, Ohio, Oklahoma, South Carolina, Texas, and West Virginia. Additionally, the composite sum effectiveness scores from Oklahoma and Texas teachers were statically significantly higher than eight other states (Iowa, Kansas, Massachusetts, Minnesota, New York, North Dakota, South Dakota, and Wisconsin).

Conclusions

Nationally, SBAE teachers are diverse and have a variety of needs. With 2807 SBAE teachers responding, a wide range of personal and professional characteristics were identified. Diversity is evident regarding respondents' age, sex, certification status, and program size. Respondents ranged in age from 21 to 72 years old, with over one-half (51.2%) being female. The slightly higher percentage of females aligns with Smith et al.'s (2018) finding that "the majority of new agricultural education majors [are] . . . female" (p. 1). The highest percentage (29.5%) of respondents were between 21 to 29 years of age range. Additionally, 34.7% ($n = 974$) of the respondents were within their first five years of teaching SBAE, which aligns with the fact that the conversion rate of graduates from SBAE teacher preparation programs entering the SBAE profession was at an all-time high for 2017 at 75% (Smith et al., 2018). However, research shows that the greatest turnover of SBAE teachers occurs within the first five years in the profession (Tippens et al., 2013). Both potential factors result in a much younger age range in the SBAE teaching profession. This phenomenon does not align with the nationwide average of teachers, as only 14.9% are under the age of 30 (SASS, 2017).

Although, a high percentage of respondents were less than 40 years of age, the majority (60.2%) intend to retire as an SBAE teacher. This is promising news for the SBAE profession, as numerous studies have found a high percentage of teachers leave the profession prior to retirement (Day, 2008; Tippens et al., 2013)

Over 72% of respondents received their certification through a traditional route. Although the greatest source of new SBAE teachers continues to be through the traditional certification route (75.4%), alternative routes to certification have been and continue to be trending upward (Camp et al., 2002; Smith et al., 2018). This growing percentage can help fill a void and offset the nationwide teacher shortage (Eck & Edwards, 2018; West & Frey-Clark, 2018). Regarding educational attainment, 62.4% of SBAE teacher respondents have earned a bachelor's degree only; 44% have obtained a master's degree, and approximately 1% have a terminal degree. This conclusion compares similarly to national data, as over 40% of teachers nationwide have a bachelor's degree, 47.4% have a master's degree, and less than 10% have a terminal degree (SASS, 2017).

SBAE programs across the nation vary in program area and size. Specifically, programs range from small, rural schools to large, urban schools in 11 of the 20 largest cities in the U.S. (National FFA Organization, 2017). This study identified similar diversity amongst program size, with SBAE programs ranging from one teacher with fewer than 20 students to 10 or more teachers in a program exceeding 1500 students. The identification of personal and professional characteristics of respondents nationwide provides a broad view of the differences found in teachers and programs across the country.

SBAE teachers' intent to retire from the profession plays a substantial role in their self-perceived teaching effectiveness. A statistically significant main effect existed between SBAE teachers' intent to retire and their composite sum effectiveness score $F(4, 2253) = 17.13, p < .01$. More specifically, those who intend to retire as a SBAE teacher had higher mean effectiveness scores when compared to those who do not intend to retire or were undecided. Thus, teachers who intend to retire as a SBAE teacher considered themselves to be effective teachers, which can be an indicator of career satisfaction (Clark et al., 2014; Kitchel et al., 2012; Walker et al., 2004) and a desire to remain in the profession (Tippens et al., 2013). Additionally, SBAE teachers who remain in the profession tend to have a positive work-life balance and relying on existing support structures including parents, administrators, community members, and students, which leads to their sustained careers (Clark et al., 2014). It is likely that these factors not only play a role in career sustainability, but also may lead to increased teacher effectiveness. This conclusion aligns with previous studies linking teacher self-efficacy with career satisfaction (Blackburn & Robinson, 2008; Blackburn et al., 2017).

The findings of this study also seem to suggest that multiple personal and professional characteristics fail to impact teacher effectiveness, including number of years teaching, number of years in current position, pathway to certification, highest degree earned, age of the teacher, sex, and size of the program. Although these characteristics were not statistically significant indicators of SBAE teacher effectiveness in this study, previous research supports a traditional pathway to certification and career tenure as important components of a quality teacher (Cohhen-Vogel & Smith, 2007; Darling-Hammond, 2003; Robinson & Edwards, 2012). Further, studies specifically in SBAE have found the majority of teachers are satisfied with their career regardless of age, sex, years teaching, or highest degree earned (Cano & Miller, 1992; Tippens et al., 2013), which align with the findings of this study.

Recommendations

Perhaps there is more to consider related to improving SBAE teacher quality and effectiveness than this study revealed. Future research should determine if differences exist related to effectiveness factors of future SBAE teachers based on high school experiences, ethnicity, and race. Further, the ETI-SBAE should be used as a needs assessment for incoming students of SBAE teacher preparation programs to determine specific training needs based on background and experiences to prepare future SBAE teachers for an effective teaching career. Additionally, long-standing SBAE teachers need to mentor aspiring and early-career SBAE teachers on the benefits of their chosen career, providing an enhanced outlook on SBAE as a career choice instead of a short-term job. The promotion of SBAE as a lifelong career could play a positive role in the effectiveness and longevity of future SBAE teachers. As this study found, teachers who intend to retire from the profession were more effective than those who did not or were undecided. Additional research needs to be conducted in Oklahoma and Texas, as they were found to be statistically significantly more effective than teachers in other states, along with Massachusetts whose teachers were less effective than any other state. Perhaps, it might be that SBAE teachers in Massachusetts are overly critical of their ability to be effective. It also could be that the “younger” teachers that populated much of this study may overestimate their effectiveness, aligning with Hoy and Spero (2005) who found some teachers overestimate and others underestimate their self-efficacy. A follow-up study using a qualitative protocol would help to further understand the career intent of SBAE teachers. SBAE teachers nationwide should encourage their administration to utilize the ETI-SBAE to evaluate their effectiveness based on a complete program, ultimately helping them further their human capital using a growth mindset.

Discussion

Certain personal and professional characteristics were found to be statistically significant in the effectiveness of SBAE teachers. It is refreshing to find that 60% of current SBAE teachers intend to remain in the profession until retirement, as teacher turnover is a consistent topic of discussion. Potentially, SBAE teachers who are satisfied with their career intend to retire from the profession instead of exiting before retirement. Perhaps teachers who plan to remain in the profession also have a higher level of self-efficacy, ultimately leading to increased teacher effectiveness when compared to those who do not intend to remain in the profession or are undecided. It is possible that the same could be said for state of employment. Potentially, the states with better support structures (i.e., SBAE program specialists, SBAE teacher induction programs, and SBAE teacher professional development) for SBAE teachers could result in increased teacher effectiveness and career satisfaction. Both of these factors are supported by SBAE teachers’ self-competency ratings, as those who deemed themselves more competent achieved a higher sum composite effectiveness score. Therefore, long-standing SBAE teachers need to mentor aspiring and early-career SBAE teachers on the benefits of their chosen career, providing an enhanced outlook on SBAE as a career choice instead of a short-term job. The promotion of SBAE as a lifelong career could play a positive role in the effectiveness and longevity of future

SBAE teachers. As this study found, teachers who intend to retire from the profession perceived themselves to be more effective than those who did not or were undecided.

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