Journal of Agricultural Education, 58(2), 1-19.
https://doi.org/10.5032/jae.2017.02001

Characteristics of Enthusiastic and Growing School-Based Agricultural Education Teachers: A Delphi Approach

R. G. (Tre) Easterly III[1] & Brian E. Myers[2]

Abstract

The most optimal way to prepare teachers is a source of debate and inquiry. The common view held in school-based agricultural education is to use professional development to augment what teachers learned in their teacher preparation program. This has been typically implemented through induction support and generic professional development. Fessler and Christensen (1992) described a teacher career cycle that highlights the need to differentiate professional development for teachers beyond the induction stage. Teachers in the Enthusiastic and Growing stage are described as having a high level of competence, but continue to grow as professionals. The purpose of this study was to determine the characteristics of Enthusiastic and Growing school-based agriculture education teachers in order to inform professional development practice. A panel of 105 Enthusiastic and Growing teachers were selected to serve on a Delphi panel and asked to identify the characteristics of an expert agriculture teacher. Twenty-seven responses were agreed upon by the panel. Some characteristics were congruent with the existing descriptions of Enthusiastic and Growing teachers, while some descriptions were unique to school-based agricultural education. Based on these findings, professional development should be implemented using a systems approach to promote these characteristics in teachers.

Keywords: Delphi; Enthusiastic and Growing; School-based agricultural education; professional development; career cycle; career stage

Introduction

The more teacher educators unravel the complexities involved in training effective teachers, the seemingly more complex the system becomes. The main focus for teacher training has historically been through preservice teacher training programs (Fessler & Christensen, 1992). In school-based agricultural education (SBAE), the debate on how to best train teachers proceeded the Smith-Hughes Act which provided funding for SBAE courses in secondary schools (Hillison, 1987; Phipps, Osborne, Dyer, & Ball, 2008). There has been extensive inquiry into teacher training for preservice teachers in SBAE (Barrick, 1993, Barrick & Garton, 2010; Connors & Mundt, 2001; McLean & Camp, 2000; Myers & Dyer, 2004; Swortzel, 1995). Yet, the need exists to develop the best system of support for teachers following initial preparation.

Osborne (1992) described SBAE as a profession that eats its young, calling for an increase in support for beginning teachers. One of the keys to improving the quality of our schools is to improve the practice of teachers through professional development (Borko & Putnam, 1995; Darling-Hammond, 1993). According to Greiman (2010) the first two to three years of teaching is the most important in the development of the teacher. Induction support programs are used to

[1] Tre Easterly is an assistant professor in the Agricultural and Extension Education Department at New Mexico State University, 105 Gerald Thomas Hall, Las Cruces, NM 88003, easterly@nmsu.edu.
[2] Brian Myers is a professor and chair of Agricultural Education and Communication at the University of Florida, 305 Rolfs Hall, Gainesville, FL, 32611, bmyers@ufl.edu.

support teacher growth during this critical period. Therefore, quality teacher professional development programs are important for practicing SBAE teachers, since preservice teacher education programs cannot fully prepare teachers for the demands of the job (Lytle, 2000). There has been an abundance of research guiding the support system for teacher induction programs in SBAE (Birkenholz & Harbstreit, 1987; Dunkin, Rickets, Peake & Uesseler, 2006; Edwards & Briers, 1999; Garton & Chung, 1997; Joerger, 2002; Layfield & Dobbins, 2002; Myers, Dyer, & Washburn, 2005). However, the debate of how to best implement professional development still has not yet reached a definitive conclusion.

The common view for teacher training includes empirically-based and specifically tailored training for preservice and induction teachers, followed by one-size fits all professional development for everyone beyond the induction stage (Fessler & Christensen, 1992). In SBAE, the number of parties involved in planning professional development results in unconnected professional development offerings (Greiman, 2010). According to Greiman (2010) local school districts, national and state branches of the National Association of Agricultural Educators, national and state branches of the Association for Career and Technical Education, the National FFA Organization, the state FFA associations, agricultural education leaders, state supervisors, agricultural commodity groups, and multiple SBAE teacher training programs in the state are all involved in planning and implementing teacher professional development. Although each group is well meaning in its professional development offering, the result is often a *shotgun* approach, which involves one shot, short-term professional development experiences but lacks an overall plan for teacher improvement and does not have the continuity to accomplish the plan (Greiman, 2010). Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2009) confirmed professional development for teachers rarely meets the criteria to be considered high quality despite having high levels of participation in professional development amongst most teachers. According to Desimone (2009) high quality professional development requires significant duration and coherence between professional development events. The implementation of *shotgun* professional development runs counter to a professional development system with coherence and duration.

Determining the professional development needs of teachers is a logical first step in developing professional development offerings for SBAE teachers (Greiman, 2010). Several researchers (Roberts & Dyer, 2004; Roberts, Dooley, Harlin, & Murphrey, 2006; Shippy, 1981) examined professional development needs of SBAE teachers in general. Yet, a focus on professional development needs of more experienced teachers is still lacking.

Theoretical Framework

According to Fessler and Christensen (1992), the most common view of teacher training is to develop tailored programs for preservice teachers, support for induction teachers, and uniform professional development for everyone else. This system for teacher training may be problematic in the fact teachers have unique professional development needs as they progress through their careers (Fessler & Christensen, 1992). Further, Fessler and Christensen (1992) purported teachers experience and interact with professional development experiences in different ways based on their professional status. To examine this process, Fessler and Christensen (1992) developed the teacher career cycle to describe the stages teachers move through in their career, what influences the stages, and how teachers in each stage engage in and benefit from professional development opportunities. The teacher career cycle stages, as posited by Fessler and Christensen (1992), are: Pre-service, Induction, Competency Building, Enthusiastic and Growing, Career Frustration, Career Stability, Career Wind-Down, and Career Exit (see Figure 1). Although the career cycle has a clear beginning and end point, the stages between Pre-Service and Career are not linear.

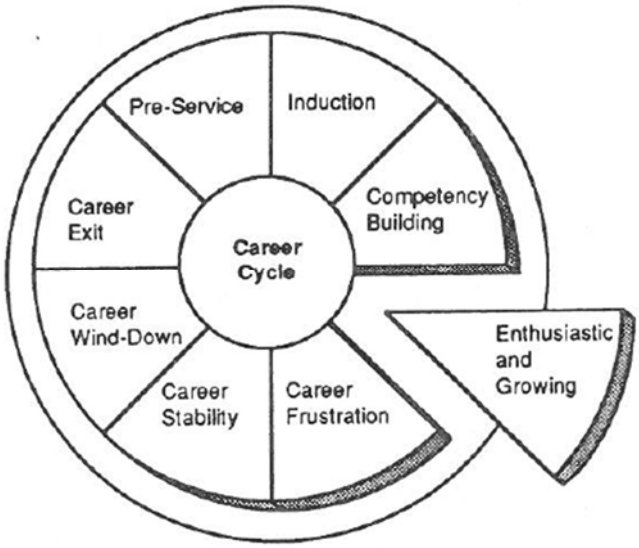

Figure 1. The Enthusiastic and Growing stage of the teacher career cycle as identified by Fessler and Christensen (1992).

Teachers in the Enthusiastic and Growing career stage are considered newly minted experts or experts that continue to grow and develop (Fessler & Christensen, 1992). The Enthusiastic and Growing career stage is not defined by measurable characteristics which are tightly bound to context, but rather to the willingness and enthusiasm to learn and grow through a multifaceted professional development process. "Enthusiastic and Growing teachers love their jobs, look forward to going to school and to the interaction with their students, and are constantly seeking new ways to enrich their teaching" (Fessler & Christensen, 1992, p. 119). According to Fessler and Christensen (1992), the Enthusiastic and Growing stage is the most desirable stage for teachers to be in. As a result, moving to the Enthusiastic and Growing stage should be the goal for teachers in other career stages. Teachers in the Competency Building stage are developing the requisite skills to be considered master teachers. The Career Frustration stage is described as a time when teachers question their work in the profession. In the Stability stage teachers are content to teach in their classroom but are not committed to further growth. Career Wind-Down and Exit stages describe teachers planning to and those that have left the teaching profession.

This study was guided by the teacher career cycle model developed by Fessler and Christensen (1992). The teacher career cycle model describes the development of teachers through stages of their careers and the influences that impact what career stage the teacher is in at any given point in their career. Personal environment factors, including family, critical incidents, and individual dispositions as well as organizational environment factors such as professional organizations, school regulations, and societal regulations all have an impact on the career cycle, according to this model.

This inquiry was specifically interested in the characteristics of Enthusiastic and Growing teachers. According to Fessler and Christensen, (1992) teachers in the Enthusiastic and Growing career stage:

1. Have a high level of competence in their teaching ability.

2. Enjoy their job.
3. Are eager to go to work every day.
4. Enjoy interacting with students.
5. Constantly seek new ways to enrich teaching.
6. Have life goals that fit with the job requirements of being a teacher.
7. Serve as leaders in professional development organizations.
8. Seek out leadership roles in their school.
9. Enjoy collaborating with other teachers.
10. Feel that they are still growing as a professional.
11. Enjoy taking leadership roles in their school.
12. Enjoy taking leadership roles in their professional organizations.
13. Believe that taking on leadership roles does not take away from effectiveness as a teacher.
14. Are comfortable serving as a mentor for induction teachers.

Limited research has been conducted on teacher career stages in SBAE. Greiman (2010) discussed the usefulness of applying the teacher career cycle model to inform professional development in SBAE. According to Greiman, teacher development is a career-long process that should be differentiated to meet the needs of teachers. Grieman, Walker, and Birkenholz (2005) explored the activities of induction teachers using Fessler and Christensen's (1992) career stages to guide their inquiry. A needs assessment that informed the professional needs of induction teachers has also been conducted using the teacher career cycle model (Sorensen, Lambert, & McKim, 2014).

While the research using teacher career cycles is limited, specifically for the Enthusiastic and Growing stage, research describing expert and effective practice can provide some insight into teachers' traits and professional development needs. Roberts and Dyer (2004) stated effective teachers are effective classroom instructors, knowledgeable in supervising FFA activities and SAE projects, maintain relationships with the community, market their program, participate in professional growth and possess certain personal qualities. Shippy (1981) explored ten categories of professional competencies rated by SBAE teachers in Delaware. Shippy (1981) found a total of 246 competencies that are important for SBAE teachers including total program planning, instructional planning, execution of instruction, evaluation of instruction, advising a FFA chapter, facilitating [SAE] projects, managing student behavior, providing guidance to students, managing school-community relationship and participating in professional development. Roberts and Dyer (2004) explored the characteristics of effective SBAE teachers in Florida. Roberts and Dyer (2004) findings were strikingly similar to Shippy (1981) but added personal qualities, claiming effective teachers care for students, are motivated, and are enthusiastic. Further, Roberts et al. (2006) conducted focus groups with pre-service and in-service teachers using the constant comparative method to compare their findings to the findings of Shippy (1981) and Roberts and Dyer (2004) to determine the competencies required of agricultural science teachers. The findings of the three studies were similar. Roberts et al. (2006) found the competency, ability to work with diverse groups, was identified by the focus groups and was not mentioned in the previous studies.

Roberts et al. (2006) went on to synthesize the findings of Shippy (1981) and Roberts and Dyer (2004) as well as the findings of their study to identify the competencies and traits of successful agriculture teachers. Other researchers in the profession (Birkenholz & Harbstreit, 1987; Dunkin at al. 2006; Edwards & Briers, 1999; Garton & Chung, 1997; Joerger, 2002; Layfied & Dobbins, 2002; Myers et al. 2005) have explored the needs of beginning teachers and in-service teachers specifically. Roberts et al. (2006) proposed a model of competencies and traits of successful agricultural science teachers (see Figure 2). The variables of this model were used to categorize the research on the characteristics of expert SBAE teachers. The results from the studies are displayed in Table 1 and Table 2 for reference.

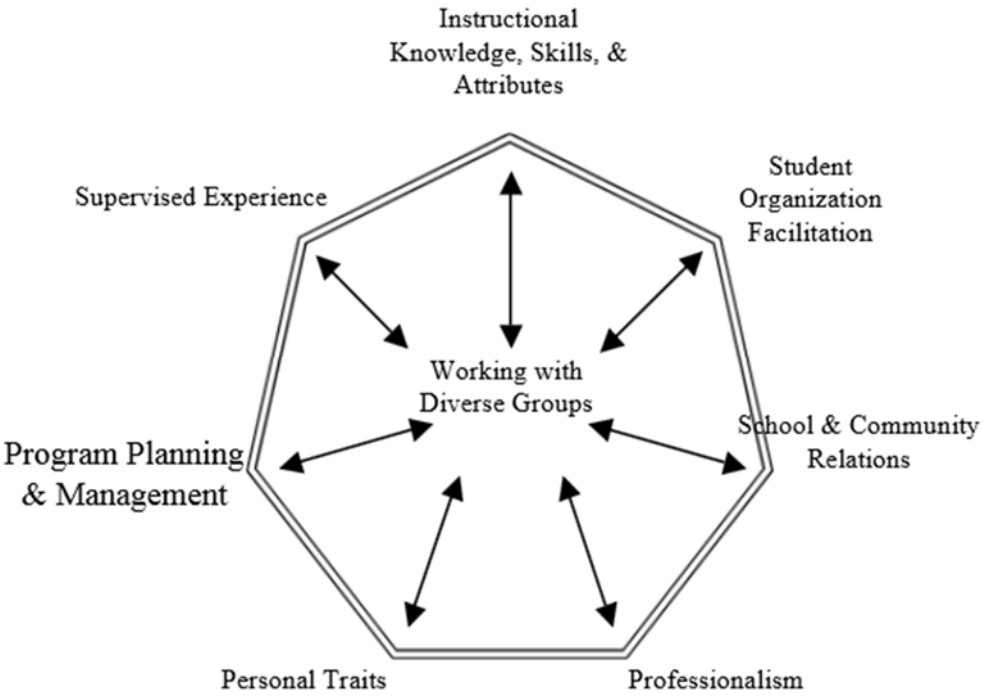

Figure 2. Model of Competencies and Traits of Successful Agricultural Science Teachers (Roberts, Dooley, Harlin & Murphrey, 2006).

Table 1

A Synthesis of Research on the Needs of Beginning SBAE Teachers

	Shippy (1981)	Birkenholz & Harbstreit (1987)	Garton and Chung (1997)	Joerger (2002)	Edwards & Briers (1999)	Myers et al. (2005)	Layfield & Dobbins (2002)
Instructional Knowledge, Skills and Attributes	X	X	X	X	X	X	X
Student Organization Facilitation	X	X	X	X	X	X	X
School and Community Relations	X	X	X	X	X	X	X
Professionalism	X				X	X	
Personal Traits					X	X	
Program Planning & Management	X	X	X	X	X	X	
Supervised Experience	X	X	X				X

X – Indicates the study identified the competency as important for SBAE teachers

Previous literature shows beginning agricultural teachers need support in technical competency areas. Birkenholz and Harbstreit (1987) found the greatest competency needs for beginning SBAE teachers graduating from the University of Missouri were in using computers in the classroom, developing agribusiness management skills, developing electricity skills. Joerger (2002) found Minnesota entry phase teachers needed help determining what content to teach. Beginning teachers have also needed support in program planning and management, student organization and facilitation, and managing SAE projects. Garton and Chung (1997) found the top needs for beginning Missouri agriculture teachers were completing reports for administration, student motivation, preparing FFA degree and proficiency award applications and developing effective public relations. Edwards and Briers (1999) found the needs of Texas entry-phase teachers to be preparing FFA degrees and awards, and marketing the program. Joerger (2002) similarly found maintaining and leveraging an advisory committee was an important competency for beginning teachers. Dunkin et al. (2006) found the needs for teachers to be motivating students to learn, teaching students to think critically, providing college guidance to students, developing FFA proficiency awards, and degree applications, managing behavior problems, and integrating current advances in agriculture technology into the curriculum. Myers et al. (2005) found the needs for

beginning SBAE teachers to be organizing an alumni chapter, organizing an advisory committee, organizing FFA events, managing student discipline, teaching students with special needs, and creating a healthy work-life balance.

Table 2.

A Synthesis of Research on the Needs of In-service SBAE Teachers

	Roberts & Dyer (2004)	Roberts et al. (2006)	Dunkin et al. (2006)	Layfield & Dobbins (2002)
Instructional Knowledge, Skills and Attributes	X	X	X	
Student Organization Facilitation	X	X	X	
School and Community Relations	X	X	X	X
Professionalism	X	X		
Personal Traits	X	X		
Program Planning & Management	X	X		
Supervised Experience	X		X	X

X – Indicates the study identified the competency as important for SBAE teachers

Purpose

The purpose of this study was to determine characteristics of Enthusiastic and Growing SBAE teachers. According to Fessler and Christiansen (1992), these teachers love their job, continuously seek for ways to improve their teaching and is the most desirable stage for teachers to be in. While a general definition exists for these teachers in a global context, a clear definition of the characteristics of Enthusiastic and Growing agricultural teachers will provide a baseline description of SBAE teachers at this stage in their professional career. Establishing such a baseline will allow those involved in planning and delivering professional development experiences to gain a better insight in the characteristics of their learners. The characteristics will also be helpful to develop and refine support systems designed to move teachers to the Enthusiastic and Growing stage. The study was guided by research priority five in the *America Association for Agricultural Education's Research Priority Areas for 2011-2015,* which establishes highly effective educational programs as a major goal for research (Doerfert, 2011).

Methods/Procedures

A modified Delphi approach was used to obtain a consensus response from a panel of Enthusiastic and Growing teachers. The Delphi approach is a group process used to solicit and organize expert responses to establish a consensus (Delp, Thesen, Motiwalla & Seshadri, 1977). The Delphi approach was selected to allow the expert panel to construct their own characteristics of expert teachers to determine if it matched the existing theory. According to Hsu and Sandford (2007) the Delphi approach can be used to achieve convergence and generate consensus amongst a group of individuals on a real-world issue. The typical Delphi approach was modified to accommodate an online delivery data collection medium as established using the precedent established by several researchers (e. g. Lundry, Ramsey, Edwards, & Robinson, 2015; Roberts, 2006; Trexler, Parr, & Khanna, 2006)

Establishing the Expert Panel

An expert panel of Enthusiastic and Growing teachers was desired for this study. While panel sizes have fluctuated in studies implementing the Delphi approach, panel sizes larger than 13 ensure reliability of greater than .80 (Dalkey, 1969). According to Hussler, Miller, & Ronde (2011), diverse panels can attenuate for bias of the members. Teachers in five states were selected to participate in this study in order to promote diversity amongst the panelists. The states selected were California, Florida, Illinois, Minnesota, and Pennsylvania.

The expert panel was identified for this study by purposefully selecting five states to participate. The states were selected to provide a variety of teacher preparation programs and professional development structures for the teachers. To create the panel for this study, three individuals from each state who worked with teachers in various capacity were selected to identify the teachers. These individuals were state FFA advisors, state agricultural education coordinators, and agricultural education teacher educators. The three individuals in each state were asked to provide a list of around ten teachers they considered to be Enthusiastic and Growing as defined by Fessler and Christensen (1992). They were asked to identify teachers who have a high level of competence, continue to grow as a professional, have a love for their job, constantly seek new ways to improve their teaching, are personally stable, and are involved in professional organizations. During the panel creation process, the individuals in the agricultural education leadership team were asked to avoid nominating teachers with less than three years of experience which is typical of teachers in the induction and competency building stage. Nominators were also instructed to avoid nominating individuals who have recently made or are considering a change in positions, which is a characteristic of teachers in several stages of the career cycle model including Induction, Competency Building, Career Wind-Down, and Career Exit. The nominators were also asked to avoid nominating individuals who have expressed frustration with policy or working with students as these are indicators of the Career Frustration stage.

An expert panel of 110 Enthusiastic and Growing teachers was identified for this study. According to Delbecq, Van de Ven, & Gustafson (1975), when a panel exceeds 30 members, few new ideas are generated. The response rate for similar recent studies using the Delphi approach for SBAE teachers have been as low 51% (Lundry, et al., 2015). To ensure the panel included 13 - 30 individuals, all 110 teachers were included in the panel. Through the data collection process, five teachers opted out of the study during the initial contact period, providing a final panel of 105 teachers.

Data Collection

The Delphi process consisted of three e-mailed questionnaires. The first e-mail was an open-ended question that asked the expert panel to identify characteristics of an expert agriculture teacher. During the first round, 25 teachers (23.8%) responded to the questionnaire providing a total of 153 responses. After duplicate and similar responses were combined, the initial responses were summarized and categorized by the researchers. The first round yielded 33 unique, usable responses.

Qualtrics software was used to administer the second and third round questionnaires. The participants were provided an e-mail with a link to the questionnaires during each round. For the second round of the study, the panelists were asked to rank their level of agreement on a 5 point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree and 5 = Strongly Agree) for the 33 items identified in the first round. Responses with a mean score of lower than 3.5 were removed from the study, which is congruent with the practices of Roberts (2006) and Trexler et al. (2006). For the second round, 39 respondents (37.1%) completed the questionnaire.

The third round questionnaire asked the respondents to indicate whether they agree or disagree with the remaining items in the study in order to achieve consensus. Consensus was determined *a priori* to be 90%. This percentage was higher than the precedent set by Roberts (2009) who used, 85% as the consensus. According to McCampbell and Stewart (1992) most Delphi studies require only three rounds to reach consensus, therefore no further rounds were planned. A response rate of 36.2% (n = 38) was obtained for the third round.

Data Analysis

Data were analyzed in three distinct and separate rounds, using unique data analysis procedures for each round. During the first round, the responses from the e-mails were analyzed using the constant-comparative method (Lincoln & Guba, 1985). During the data analysis, items that had identical and similar responses were combined into one item. The unique items were then coded and categorized into 33 separate unique codes.

Data from rounds two and three were analyzed with descriptive statistics using Microsoft Excel. Ordinal data collected with summated scales in the second round were treated as interval data and reported as means and standard deviations for clarification purposes which followed the precedent of previous studies using Delphi methods (Smalley & Retallick, 2011; Trexler et al., 2006). Nominal data collected in the third round were reported with frequency and percentages (Delp et al., 1977). Participants were instructed to add responses that were missing during the second round of data collection by typing the responses in an open ended response item in the qualtrics program. No additional responses were added during the second round of data collection.

Since the Delphi process includes qualitative data analysis and continually evolving qualitative data analysis, the rigor and trustworthiness were established by considering the recommendations of Guba and Lincoln (1994). The recommendations of Shenton (2004) were used to maintain trustworthiness. Credibility was established using well established methodological practices that followed the precedent established by previous studies (e. g. Lundry et al., 2015; Roberts, 2006; Trexler et al., 2006), using multiple methods of data collection, and iterative questioning and member checking that is inherent in the Delphi approach. Transferability, similar to external validity, refers to the appropriateness of applying the findings to the larger population (Lincoln & Guba, 1985). The expert panel consisted of teachers from five different states and

represented all four American Association of Agricultural Education regions. Demographic data were not collected for the individuals who participated in the study, however multiple individuals in each state were asked to participate. Dependability and confirmability were addressed by providing a detailed description of data collection and analysis procedures and by identifying and mitigating the effect of researcher bias during the data collection and analysis process (Shenton, 2004). Researcher bias was mitigated using triangulation and member checking procedures imbedded into the Delphi process (Dalkey, 1969).

Although an instrument to identify if teachers are in the Enthusiastic and Growing stage does not currently exist, we utilized several techniques to ensure the participants on the panel were in the Enthusiastic and Growing stage. According to Fessler and Christensen (1992), the career stages are unique and do not overlap. Therefore, characteristics of the other stages were used to eliminate participations from the pool. Although Fessler and Christensen did not include the amount of time teaching as an indicator of career stage, it was used to help limit the pool. The iterative nature of the Delphi process which includes member checking and validation can further ensure the responses indicate teachers who are in the Enthusiastic and Growing phase. Despite these procedures, the lack of a clear vetting process of the career stage of the panel members served as a limitation of the study.

The term *expert* was used rather than Enthusiastic and Growing to avoid having to provide a definition for the term, which could have limited the responses. Because developing expertise is a hallmark of the Enthusiastic and Growing stage, the expert term was determined to a more parsimonious term that would avoid eliciting desired responses from the participants. The term master teacher was also used by Fessler and Christensen (1992), but was not used by researchers in the study to avoid confusion between expertise and the highest degree held by the teacher. The term effective was also considered, but not chosen because teachers in other stages may possess traits that make them effective, but are not considered experts. Fessler and Christensen (1992) purported teachers in the stability stage are competent in teaching but are not committed to their growth as a professional. We determined effective may be interpreted as competent by some participants.

Results

For the initial round, 25 teachers (23.8%) responded to the questionnaire providing a total of 153 responses. The responses were grouped into 33 themes by the researchers and are listed in Table 3.

Table 3

Level of Agreement on the Characteristics of An Expert Agriculture Teacher

An expert agriculture teacher:	Mean[a]	SD
Cares for students	4.82	0.68
Provides hands on experiences for students	4.79	0.57
Is dedicated	4.72	0.72
Is engaging	4.72	0.72
Is a life-long learner	4.68	0.62
Is a role model	4.67	0.74
Is enthusiastic	4.59	0.75
Integrates FFA	4.54	0.76
Is flexible	4.54	0.82
Encourages SAE participation	4.53	0.65
Works effectively with community members	4.51	0.79
Is a critical thinker	4.46	0.82
Participates in professional development	4.46	0.79
Is a mentor to others	4.44	0.72
Is effective at classroom management	4.42	0.79
Is innovative/creative	4.41	0.64
Is an effective communicator	4.41	0.75
Works effectively with administrators	4.38	0.75
Is patient	4.36	0.74
Is knowledgeable of the teaching and learning process	4.33	0.77
Has a diverse skill set	4.26	0.59
Uses differentiated instruction	4.21	0.80
Works effectively with teachers	4.21	0.77

Table 3 (continued)

Level of Agreement on the Characteristics of An Expert Agriculture Teacher

An expert agriculture teacher:	Mean[a]	SD
Is knowledgeable in technical agriculture content	4.18	0.79
Has safe and clean facilities	4.10	0.88
Maintains a healthy work/life balance	4.08	0.96
Is organized	4.05	0.89
Is fiscally responsible	4.03	0.90
Is humble	3.92	0.77
Works effectively with policy makers	3.87	0.83
Has at least 5 years of experience	3.44	0.99
Serves as a leader in NAAE state associations	3.32	1.12
Has at least 10 years of experience	3.26	1.19

Note. Characteristics of an expert agriculture teacher were generated in Round 1 ($n = 25$). Level of agreement with each characteristics was generated in Round 2 ($n = 39$).
[a] Original scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree or Disagree, 4 = Agree, 5 = Strongly Agree.

Round Two asked respondents to rate their level of agreement using a five-point Likert scale from strongly disagree to strongly agree. Respondents were also given the option to make comments and edit items on the questionnaire. A mean response score of greater than 3.5 was determined *a priori* to use the responses for round three. For round two, a total of 39 respondents (37.1%) completed the questionnaire. Twenty-two responses were retained by the teachers for the next round (see Table 3). There were no edits to the questionnaire suggested by the participants. The highest level of agreement was, Cares for students ($M = 4.82$). The next highest was, Provides hands on experiences for students ($M = 4.79$).

For the third round, participants were asked to complete a questionnaire asking if they agreed with the responses. Answers were in the form of a yes or no response. A total of 38 (36.2%) respondents completed the questionnaire. A level of 90% agreement was determined *a priori* for items to make the final consensus list. As a result of this round, three responses were removed from the consensus list (see Table 4). These responses were Works effectively with policy makers (89.5%), Is humble (86.8%), and Is organized (81.6%). A total of 16 responses received 100% agreement.

Table 4

Percent Agreement on the Characteristics of An Expert Agriculture Teacher

An expert agriculture teacher:	Agree %
Cares for students	100
Provides hands on experiences for students	100
Is dedicated	100
Is engaging	100
Is a life-long learner	100
Is flexible	100
Encourages SAE participation	100
Is a critical thinker	100
Participates in professional development	100
Is effective at classroom management	100
Is innovative/creative	100
Is an effective communicator	100
Works effectively with administrators	100
Is knowledgeable of the teaching and learning process	100
Has a diverse skill set	100
Works effectively with teachers	100
Is a mentor to others	97.6
Is a role model	97.4
Is enthusiastic	97.4
Works effectively with community members	97.4
Uses differentiated instruction	97.4
Integrates FFA	97.3
Is knowledgeable in technical agriculture content	97.2

Table 4 (continued)

Percent Agreement on the Characteristics of An Expert Agriculture Teacher

An expert agriculture teacher:	Agree %
Has safe and clean facilities	94.7
Is fiscally responsible	94.7
Is patient	92.1
Maintains a healthy work/life balance	91.9
Works effectively with policy makers	89.5
Is humble	86.8
Is organized	81.6

Note. n = 38

Conclusions and Recommendations

A majority of the characteristics in the final list describe personal, emotional, or philosophical characteristics as compared to skills or abilities. These characteristics bore some similarity to the characteristics described by Fessler and Christensen (1992). The characteristics, Cares for students, Is a life-long learner, Participates in professional development, Works effectively with administrators, Is a mentor to others, and Maintains a work/life balance, match Fessler and Christensen's (1992) description of Enthusiastic and Growing teachers. The competency Is knowledgeable in technical agriculture content, is also related to the characteristic of enthusiastic teachers having a high level of competence in their teaching ability as defined by Fessler and Christensen (1992).

The characteristics Provides hands on experiences for students, Encourages SAE participation, Works effectively with community members, Integrates FFA, Has safe and clean facilities, and Is fiscally responsible, are characteristics unique to SBAE teachers. The characteristics of Enthusiastic and Growing teachers found in this study were also similar to the competencies identified by Roberts et al. (2006) with the exception of program planning and management. Future studies should include these characteristics and examine ways to improve them for teachers. The link between program planning and management and Enthusiastic and Growing stage teachers should be further explored.

Participation in professional development should be recognized by the state and national professional organizations and encouraged in pre-service teacher training. The professional development for teachers should be organized in a way that encourages lifelong learning and systematic improvement in specific areas. This is congruent with the findings of Fessler and Christensen (1992) who indicated expert teachers search for ways to grow improve their practice. The respondents indicated being a life-long learner and participating in professional development were characteristics of expert SBAE teachers. Based on this finding, further research should be conducted to create effective professional development for agriculture teachers, improve

ineffective professional development, and guide teachers through the process of selecting and participating in worth-while professional development opportunities that help them become experts.

The goal for teachers in the competency building stage is to develop expertise and testing new techniques in order to move to the Enthusiastic and Growing stage. The characteristics of Enthusiastic and Growing teachers may provide some insight into the professional development needs of SBAE teachers in the competency building stage. Although identifying specific traits for training may be beyond the scope of this study, a theoretical case can be made for including traits focused on skills and ability into training for competency building teachers. These traits include Providing hands on experiences, Encouraging SAE participation, Uses differentiated instruction, Integrates FFA, Is knowledgeable in technical agriculture content, Has safe and clean facilities, and Is fiscally responsible. Further research is needed to develop the most optimal professional development for SBAE teachers in the competency building stage.

This study found Enthusiastic and Growing SBAE teachers work effectively with administrators. Professional development could be developed to help teachers in the frustration stage mend and foster positive relationships with their principals. Fessler and Christensen (1992) identified the principal as a key individual to support the teacher in Career Frustration. This study also found that support may also come from community members and other teachers. Further research should be conducted to explore these relationships and to develop professional development to strengthen these relationships for these teachers. According to Fessler and Christensen (1992), teachers in the Career Frustration stage may benefit from professional development that provides support for teachers and lets them share their ideas and experiences. This type of professional development should be explored further.

Professional development that leads to the characteristics found in this study could be helpful for these teachers. Professional development that helps teachers become more dedicated, engaged, and enthusiastic could be especially beneficial for teachers in the Career Stability stage. Teachers in the stability stage are disengaged from their commitment to teaching (Fessler & Christensen, 1992). Ideally, professional development would help move teachers from the stability stage to the Enthusiastic and Growing stage. Professional development for teachers in the stability stage should be explored further to determine how these teachers can become reengaged in their practice.

Professional development is a multifaceted process that should be differentiated for teachers in different career stages. The paradigm of one system of professional development for all teachers past the induction stage does not match theory or what is known about practice. Professional development should also be viewed as a differentiated process that includes more than disjointed workshops (Greiman, 2010). The findings in this study provide a baseline for the competencies to focus on when differentiating professional development for SBAE teachers in the Enthusiastic and Growing stage. The idea that teachers have unique needs beyond induction support should be further explored. Further research is needed to determine if professional development can be a significant factor in moving a teacher to the Enthusiastic and Growing career stage more quickly, or cause a teacher to re-enter that stage if they are in the Frustration or Stability stage. The characteristics found in this study should not be used as objectives or topics for professional development in their current state, but rather serve as characteristics of the archetype SBAE teacher. Objectives for professional development should be made that help teachers exhibit the characteristics in this study. Subsequent research is encouraged to determine the most effective ways to design and deliver professional development programs that move teachers to the Enthusiastic and Growing stage as quickly as possible and keep them there for as long as possible.

Further inquiry is also needed to determine the relationship between the teacher career cycle, teacher retention, and student learning. Collaboration between the parties involved in delivering professional development should also be encouraged to make an organized, strategic effort that could lead to the most positive impact for the ultimate benefactors of quality instruction – the students involved in SBAE programs.

The literature has shown professional development for induction teachers should include training on managing the stress of a new job, managing FFA and SAE activities, and teaching basic technical agricultural concepts (Dunkin et al, 2006; Joerger, 2002; Myers et al., 2005). The findings of this inquiry show that professional development for expert teachers should focus on refining practice related to instruction and program management. The findings also show certain personal characteristics are important and should be assessed as outcome measures of professional development systems. This requires those involved in professional development to take a systems view of professional development and make adjustments based on the practice of the professionals participating in the development. The characteristics Is engaging, Is dedicated, and Is a life-long learner for example, should not be finite professional development topics, but rather items for those involved in developing a professional development system to use to reflect on to make sure teachers are ultimately exhibiting these skills, and make systemic changes if not.

References

Barrick, R. K. (1993). A conceptual model for a program of agricultural education in colleges and universities. Journal of Agricultural Education, 34(3), 10-16. doi: 10.5032/jae.1993.03010

Barrick, R. K., & Garton, B. L. (2010). Frameworks for agricultural teacher preparation. In R. M. Torres, T. Kitchel, & A. L. Ball (Eds.), Preparing and advancing teachers in agricultural education (pp. 30-41). Columbus, OH: Curriculum Materials Service, The Ohio State University.

Borko, H., & Putnam, R. (1995). Expanding a teachers' knowledge base: A cognitive psychological perspective on professional development. In T. Guskey & M. Huberman (Eds.), Professional development in education: New paradigms and practices (pp. 35–66). New York: Teachers College Press.

Birkenholz, R. J., & Harbstreit, S. R. (1987). Analysis of the in-service needs of beginning vocational agriculture teachers. Journal of the American Association of Teacher Educators in Agriculture, 28(1), 41-49. doi: 10.5032/jaatea.1987.01041

Connors, J. J., & Mundt, J. P. (2001, December). Characteristics of preservice teacher education programs in agricultural education in the United States. Paper presented at the 28th Annual National Agricultural Education Research Conference, New Orleans, LA.

Dalkey, N. C. (1969). The Delphi method: An experimental study of group opinion. Santa Monica, CA: The Rand Corporation.

Darling-Hammond, L. (1993). Reframing the school reform agenda: Developing capacity for school transformation. Phi Delta Kappan, 74, 735–761.

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). Professional learning in the learning profession: A status report on teacher development in the United States and abroad. Dallas, TX: National Staff Development Council.

Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). Group techniques for program planning. Glenview, IL: Scott, Foresman, and Co.

Delp, P., Thesen, A., Motiwalla, J., & Seshadri, N. (1977). Delphi: system tools for project planning. Columbus, OH: National Center for Research in Vocational Education, The Ohio State University.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. Educational Researcher, 38, 181-199. doi: 10.3102/0013189X08331140

Doerfert, D. L. (Ed.) (2011). National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Duncan, D. W., Ricketts, J. C., Peake, J. B., & Uesseler, J. (2006). Teacher preparation and in-service needs of Georgia agriculture teachers. Journal of Agricultural Education, 47(2), 24-35. doi: 10.5032/jae.2006.02024

Edwards, M. C., & Briers, G. E. (1999). Assessing the in-service needs of entry-phase agriculture teachers in Texas: A discrepancy model versus direct assessment. Journal of Agricultural Education, 40(3), 40-49. doi:10.5032/jae.1999.03040

Fessler, R., & Christensen, J. C. (1992). The teacher career cycle: Understanding and guiding the professional development of teachers. Boston, MA: Allyn and Bacon

Garton, B. L., & Chung, N. (1997). An assessment of the in-service needs of beginning teachers of agriculture using two assessment models. Journal of Agricultural Education, 38(3), 51-58. doi: 10.5032/jae.1997.03051

Greiman, B. C. (2010). Continuing professional development. In R.Torres, T. Kitchel, & A. Ball (Eds.), Preparing and advancing teachers in agricultural education (pp. 180-200). Columbus, OH: The Ohio State University Curriculum Materials Service.

Greiman, B. C., Walker, W. D., & Birkenholz, R. J. (2005). Influence of the organizational environment on the induction stage of teaching. Journal of Agricultural Education, 46(3), 95-106. doi: 10.5032/jae.2005.03095

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research. Thousand Oaks, CA: Sage Publications Inc.

Hillison, J. (1987). Agricultural teacher education preceding the Smith-Hughes Act. Journal of the American Association of Teacher Education in Agriculture, 28(2), 8-17. doi: 10.5032/jaatea.1987.02008

Hsu, C., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. Practical Assessment, Research and Evaluation, 12(10).

Hussler, C., Muller, P., & Ronde, P. (2011). Is diversity in Delphi groups useful? Evidence from a French forecasting exercise on the future of nuclear energy. Technological Forecasting and Social Change, 78(9), 1642-1653. doi: 10.1016/j.techfore.2011.07.008

Joerger, R. M. (2002). A comparison of the in-service education needs of two cohorts of beginning Minnesota agricultural education teachers. Journal of Agricultural Education, 43(3), 11-24. doi: 10.5032/jae.2002.03011

Layfield, K. D., & Dobbins, T. R. (2002). In-service needs and perceived competencies of South Carolina agricultural educators. Journal of Agricultural Education, 43(4), 46-55. doi: 10.5032/jae.2002.04046

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage Publications Inc.

Lundry, J., Ramsey, J. W., Edwards, M. C., & Robinson, J. S. (2015). Benefits of career development events as perceived by school-based, agricultural education teachers. Journal of Agricultural Education, 56(1), 43-57. doi: 10.5032/jae.2015.01043

Lytle, J. H. (2000). Teacher education at the millennium: A view from the cafeteria. Journal of Teacher Education, 51(3), 174-179. doi: 10.1177/0022487100051003003

McCampbell, W. H., & Stewart, B. R. (1992). Career ladder programs for vocational education: Desirable characteristics. Journal of Vocational Education Research, 17(1), 53-68.

McLean, R. C., & Camp, W. G. (2000). An examination of selected preservice agricultural teacher education programs in the United States. Journal of Agricultural Education, 41(2), 25-35. doi: 10.5032/jae.2000.02025

Myers, B. E., & Dyer, J. E. (2004). Agricultural teacher education programs: A synthesis of the literature. Journal of Agricultural Education, 45(3), 44-52. doi: 10.5032/jae.2004.03044

Myers, B. E., Dyer, J. E., & Washburn, S. G. (2005). Problems facing beginning agriculture teachers. Journal of Agricultural Education, 46(3), 47-55. doi: 10.5032/jae.2005.03047

Osborne, E. W. (1992). A profession that eats its young. The Agricultural Education Magazine, 64(12), 3–4.

Phipps, L. J., Osborne, E. W., Dyer, J. E., & Ball, A. (2008). Handbook on agricultural education in public schools. Clifton Park, NY: Delmar

Roberts, T. G. (2006). Developing a model of cooperating teacher effectiveness. Journal of Agricultural Education, 47(3), 1-13. doi: 10.5032/jae.2006.03001

Roberts, T. G., Dooley, K. E., Harlin, J. F., & Murphrey, T. P. (2006). Competencies and traits of successful agricultural science teachers. Journal of Career and Technical Education, 22(2), 1-11.

Roberts, T. G., & Dyer, J. E. (2004). Characteristics of effective agriculture teachers. Journal of Agricultural Education, 45(4), 82-95. doi: 10.5032/jae.2004.04082

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. Education for Information, 22, 63-75.

Shippy, R. D. (1981). Professional competencies needed by beginning teachers of agriculture/agribusiness. The Journal of the American Association of Teacher Educators in Agriculture, 22(1), 29-34. doi: 10.5032/jaatea.1981.01029

Smalley, S. W., & Retallick, M. S. (2011). Purposes, activities, and documentation of early field experience in agricultural teacher education: A national Delphi study. Journal of Agricultural Education, 53(3), 100-109. doi: 10.5032/jae.2011.03100

Sorensen, T. J., Lambert, M. D., & McKim, A. J. (2014). Examining Oregon agriculture teachers' professional development needs by career phase. Journal of Agricultural Education, 55(5), 140-154. doi: 10.5032/jae.2014.05140

Swortzel, K. A. (1995). Program for the preparation of preservice agricultural education teachers for the twenty-first century. (ERIC Document Reproduction Service No. ED 389 676).

Trexler, C. J., Parr, D. M, & Khanna, N. (2006). A Delphi study of agricultural practitioners' opinions: Necessary experiences for inclusion in an undergraduate sustainable agricultural major. Journal of Agricultural Education, 47(4), 15-25. doi: 10.5032/jae.2006.04015