

Secondary Agricultural Education Teachers' Perceived Importance and Ability when Accommodating Students with Special Needs

Raegan Ramage Martin¹

Richie Roberts²

Kristin S. Stair³

J. Joey Blackburn⁴

Abstract

Each year, the number of students with a documented disability in public schools in the U.S. has increased. However, school-based agricultural education (SBAE) teachers continue to identify a lack of confidence when teaching students with exceptionalities. This lack of confidence has been exacerbated by a lack of professional development regarding teaching students with special needs. To better understand this issue, this investigation sought to describe Louisiana SBAE teachers' educational experiences in accommodating students with special needs and describe their desired professional development needs. This study employed a Borich-style online survey in which participants indicated their perceived importance and ability when accommodating different disability categories as well as utilizing specific strategies when teaching students with special needs through mean weighted discrepancy scores (MWDS). Findings from this investigation identified the need for additional professional development for Louisiana SBAE teachers', specifically concerning the disability types of blindness or visual impairment, deafness or hearing impairment, autism, and emotional or behavioral disorders. In addition, agricultural teachers desired to understand better the legal regulations for teaching students with exceptionalities in the classroom as well as through FFA and SAE activities. As a result, we recommend tailoring professional development to Louisiana SBAE teachers' needs based on accommodation and disability types.

Introduction and Literature Review

Historically, agricultural education has been essential in developing the employability skills of students with special needs (Lundry et al., 2015; Wonacott, 2001). Specifically, the hands-on application of the agricultural education curriculum has been shown to provide positive outcomes for students with various learning needs (Harvey, 2001; McLeskey & Weller, 2000). As a result, almost one-fifth of school-based agricultural education (SBAE) students in the United States were identified as having a learning disability in 2011 (Easterly & Myers, 2011). This came at a time when public school accountability demanded school systems more accurately meet students' needs (Dormody et al., 2006). The hands-on application of agricultural skills has allowed students with special needs to cultivate occupational skills and a positive self-identity that could be applied to life post-graduation and ultimately increase employment opportunities

¹Raegan Ramage Martin is an Agriscience Teacher at Springfield High School, 27322, LA HWY 42, P.O. Box 39, Springfield, LA, 70462, raegan.ramage@lpsb.org

²Richie Roberts is a Professor and Department Head for the Department of Agricultural and Extension Education at New Mexico State University, MSC 3501, P.O. Box 30003, Las Cruces, New Mexico, 88003-8003; roberts3@nmsu.edu; <https://orcid.org/0000-0002-2993-4945>

³Kristin S. Stair is a Professor and Department Head for the Department of Agricultural and Extension Education and Evaluation at Louisiana State University, 135 J.C. Miller Hall, 110 LSU Union Square, Baton Rouge, LA, 70803, kstair@lsu.edu

⁴J. Joey Blackburn is the Academic Program Coordinator for Agriculture in the Department of Agriculture at St. Charles Community College, Culinary and Agriculture Center, 1 Academy Place, Dardenne Prairie, MO 63368; jblackburn@stchas.edu

(Bowling & Ball, 2020; Hansen et al., 2003; Harvey, 2001). However, to meet the diverse needs of agricultural education students, SBAE teachers must be provided adequate training through formalized education and professional development training (Stair, 2009).

The Education for All Handicapped Children Act was passed in 1975 and has been regarded as one of the first policies designed to protect the rights of students with special needs (USDOE, 2010). Legislation has evolved over time, and students with special needs have most recently been served through the Individuals with Disabilities in Education Act (IDEA). IDEA is comprised of thirteen categories of disabilities including (a) autism spectrum disorder, (b) blindness or a visual impairment, (c) deaf-blindness, (d) developmental delay, (e) emotional disturbance, (f) hearing impairments, including deafness, (g) intellectual disability, (h) orthopedic impairment, (i) other health impairments, (j) specific learning disabilities, (k) speech or language disabilities, (l) traumatic brain injury, and (m) developmental delay (IDEA, 2004). Although students in this population have increased in prevalence over the past 50 years (NCES, 2020), research has indicated that teachers have historically been underprepared to teach these individuals (Hoerst & Whittington, 2009; Stair et al., 2010). In agricultural education, research has shown that teachers often disagree that their teacher preparation programs prepared them to teach students with unique learning needs (Hoerst & Whittington, 2009; Roberts et al., 2020b; Stair et al., 2010).

In addition to formal training, professional development programs have been identified as a critical support system for teachers in the classroom as they seek to address deficiencies and emergent changes in education (Birman et al., 2000; Easterly & Myers, 2018; Ruhland & Bremer, 2002). Alquraini and Gut (2012) emphasized that education should be an ongoing process for educators and professional development is essential to help teachers succeed. Further, relationships have been identified between SBAE teachers' engagement in professional development and career satisfaction (Easterly & Myers, 2019). However, not all professional development programs have been created equal. The most effective opportunities have been designed to address teachers' specific needs, which may differ based on various contextual variables. For example, Louisiana agricultural education teachers in all career stages have reported that they desired more professional development opportunities to teach learners with special needs (Roberts et al., 2020).

Additionally, Stair et al. (2019) analyzed the professional development needs of SBAE teachers in Louisiana based on traditional and alternative certification. An analysis between these two groups identified different professional development needs by licensure type and acknowledged that professional development needs were not static and changed over time. Consequently, more research was warranted to understand the challenges of SBAE teachers as they accommodate students with special needs to help ensure they can be retained in the profession.

Conceptual and Theoretical Framework

Teacher perceptions often guide the success of inclusive practices. As such, it was critical to understand how teachers make sense of their perceptions regarding accommodating students with disabilities in SBAE. To achieve this, we employed the theoretical lens of sensemaking to ground this investigation (Weick, 1995). Karl Weick introduced sensemaking in 1969. He later defined the concept as "the making of sense" (Weick, 1995, p. 4). Sensemaking occurs when an individual is presented with a large amount of information about a new topic, such as preservice education, where the individual processes the information, and the product is an action response (Weick, 1995). The concept represents the mechanisms an individual may utilize when processing a concept (Weick, 1995).

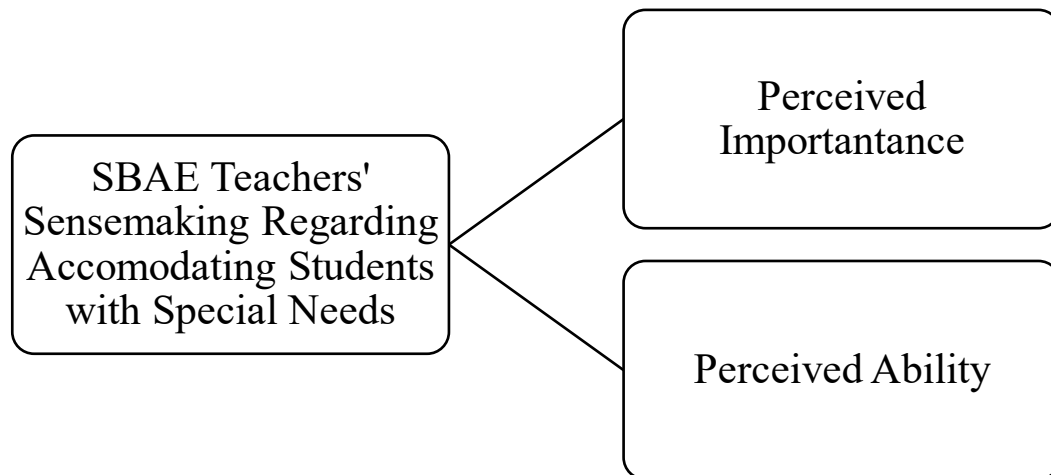
This processing occurs through three key stages: (1) notice, (2) interpretation, and (3) action (Lycett et al., 2016). Notice happens when the individual identifies the presented information, followed by interpretation when they have made sense of such (Lycett et al., 2016). Lastly, action results from the individual's response to the information after interpretation, where their prior beliefs may influence the interpretation (Weick,

1995). Through exploring participants' sensemaking, we better understood how teachers' prior education about teaching students with special needs and their professional development needs influenced their perceptions about the importance and ability of the phenomenon.

To operationalize this concept, we employed Borich's (1980) needs assessment model as our conceptual framework for this investigation. This model outlined critical components that defined the format and quality of teachers' professional development needs (Borich, 1980). Therefore, it is often used to describe teachers' training needs by identifying discrepancies between a topic's perceived importance and an individual's professional knowledge or ability. In the context of this study, professional development needs were defined as "a discrepancy between an educational goal and trainee performance in relation to this goal" (Borich, 1980, p. 39). Typically, questionnaires that employ the Borich model have been formatted using a two-step response in which participants rank their perceived importance followed by their perceived level of competence. The difference between an individual's perceived importance and perceived competence is then calculated to determine a Mean Weighted Discrepancy Score (MWDS) for each item in the construct. Figure 1 provides a visual representation of how the theoretical and conceptual frameworks were operationalized in this investigation.

Figure 1

Conceptual Framework



Purpose and Research Objectives

The twofold purpose of this investigation was to identify Louisiana SBAE teachers' (1) previous education regarding teaching students with special needs and (2) desired professional development opportunities when accommodating students with special needs. Three research objectives guided this investigation:

1. Identify the education received by Louisiana SBAE teachers regarding teaching students with special needs.
2. Identify the discrepancy between the importance and ability of Louisiana SBAE teachers when accommodating students with special needs.
3. Identify the discrepancy between the importance and ability of Louisiana SBAE teachers regarding inclusion strategies for students with special needs.

Methodology

Instrument Design

Using the Borich (1980) model, an instrument was developed that consisted of two constructs and additional demographic information. The two constructs provided participants with 37 double-matrix competencies containing disability types as well as strategies for the successful inclusion of students with special needs. Participants were asked to respond to each competency twice on a four-point scale, first by rating the self-perceived importance of the information and then by rating their self-perceived ability.

The first construct included 11 competencies and asked participants to indicate their perceived importance and perceived degree of competence when accommodating disabilities recognized by IDEA, which included (a) attention deficit hyperactivity disorder (ADHD), (b) autism spectrum disorder, (c) blindness or a visual impairment, (d) deaf or hearing impairment, (e) emotional or behavioral disorder, (f) intellectual disability, (g) orthopedic impairment, (h) other health impairments (not including ADHD), (i) specific learning disabilities, speech or language disabilities, and (j) traumatic brain injury. Due to the prevalence of ADHD in the general student population, it was removed from being included with Other Health Impairments and provided its own category in the instrument. The second construct included 27 competencies regarding inclusion strategies for students with special needs in SBAE, sourced from instruments created by Kessell (2005) and Stair (2009).

Content validity was established through an expert panel review of three agricultural education faculty members who determined the instrument to be valid. Prior to instrument distribution, a pilot study was conducted with SBAE teachers in a neighboring state, which was selected due to the similarity of demographics to SBAE teachers in Louisiana. The pilot study data concluded with 25 responses. Reliability was established by Cronbach's alpha by analyzing each item on the two constructs that consisted of three data groups. The reliability scores included: Construct One – Grouping One, importance ($\alpha = 0.922$) and competence ($\alpha = 0.896$); Construct Two – Grouping Two, importance ($\alpha = 0.944$) and competence ($\alpha = 0.908$); and Grouping Three, importance ($\alpha = 0.973$) and competence ($\alpha = 0.930$), indicating strong reliability.

Data Analysis

Research objective one sought to determine the education received by SBAE teachers in Louisiana when teaching students with special needs. Therefore, results from this objective were analyzed by employing descriptive statistics (e.g., frequency, mean, and percentage). Research objectives two and three aimed to describe the discrepancy between Louisiana teachers' self-perceived importance and ability regarding disability classifications and inclusion strategies for students with special needs in SBAE. To meet the needs of objective two, MWDS was calculated and placed in descending rank order.

For the first research objective, data were analyzed using SPSS Version 26. Regarding objectives two and three, a Microsoft Excel-based MWDS calculator (McKim & Saucier, 2011) was employed to determine a discrepancy score for each competency in the two constructs (Borich, 1980). Specifically, a discrepancy score was calculated for each participant's response by subtracting the indicated degree of importance from the degree of ability (Garton & Chung, 1997). Next, the weighted discrepancy score was calculated by multiplying the individual competency discrepancy score by the mean importance rating of the competency (Garton & Chung, 1997). The MWDS for each competency was then calculated by dividing the sum of the weighted discrepancy scores by the number of participants who responded (Garton & Chung, 1997).

Population and Sample

The target population of this study was SBAE teachers in Louisiana ($N = 267$). To collect data, we employed the Dillman et al. (2014) tailored design approach to facilitate the collection of data through email. An initial email was sent to all SBAE teachers in Louisiana informing them of the study by Louisiana FFA staff. Follow-up emails with a link to the questionnaire were also sent by Louisiana FFA state staff using the Louisiana FFA listserv. We used this approach to minimize coverage error in the study (Dillman et al., 2014). Following email communication, participants were contacted by phone, asking them to complete the survey. Of those who chose to participate ($n = 102$), 64 completed the instrument in its entirety for a response rate of 24%. Of the initial 102 that chose to participate, 22 did not complete the first grouping, an additional seven did not complete the second grouping, and eight did not complete the last grouping.

The nonresponse error of the investigation was approached through a comparison of early to late respondents (Linder et al., 2001). For the purpose of this comparison, early respondents were the first 25% of participants ($n = 18$) to complete the survey, and the late respondents were the last 25% of participants ($n = 19$) to complete the survey. Respondent groups were then compared through a t-test to compare participant demographics of age, gender, licensing certification method, and years of teaching. No statistically significant differences were present in age, years of teaching, or licensure certification method. However, a statistically significant difference was detected for gender, with more male responses in the last 25% of respondents. Prior literature has shown male participants being more likely to complete a survey following a reminder email, which aligns with males falling in the late response rate of this investigation and responding after multiple reminder emails were sent (Saleh & Bista, 2017). However, due to discrepancies between early and late respondents, it was determined that the results from this investigation were not generalizable to participants outside of this investigation (Linder et al., 2001).

Respondents consisted of 31 (48.40%) males and 33 (51.60%) females. When asked about their highest degree earned, 35 (54.70%) participants indicated they had achieved a bachelor's degree, 23 (35.90%) indicated a master's degree, four (6.30%) possessed a specialist or sixth-year degree, and two (3.10%) participants had earned a doctoral degree. Regarding the teacher education credential pathway, 39 (60.90%) participants received their teaching license from a traditional Bachelor of Science program, eight (12.50%) participants received their alternative licensure from a Master of Science program, and 17 (26.60%) received their licensure from other alternative pathways. Participants were also asked to report the number of years they had taught. As a result, participants reported a minimum number of years teaching as two and a maximum number of years teaching as 33 with a median of 15 years ($M = 15$; $SD = 9.20$).

Findings

Research Objective One

Research objective one sought to describe the education received by Louisiana SBAE teachers ($n = 64$) regarding teaching students with exceptionalities. Education was defined as information gained through a formal setting of a college course focused on students with special needs or members of the exceptional population. In all, 44 (68.80%) participants indicated they had completed a college course focused on working with students with special needs, while 20 (31.30%) participants indicated they had not (see Table 1).

Table 1

Louisiana SBAE teachers who Received Formal Education for Teaching Students with Special Needs (n = 64)

Variable	<i>f</i>	%
Completion of college course that included content related to students with special needs		
Yes	44	68.80
No	20	31.30

Of the 44 (68.80%) participants who had completed a college course that included methods of teaching students with special needs, 40 (90.90%) reported the course was a requirement of their degree, and four (9.10%) reported they took the course as an elective (see Table 2). Participants were also asked to report the number of credit hours completed for teaching students with special needs. Of the 38 participants who reported the number of course hours completed, 19 (50%) reported taking three credit hours related to special education coursework. An outlier was present from one participant who completed 36 course hours as a component of completing a special education certification.

Table 2

Louisiana SBAE teachers who Completed a Course on Teaching Students with Special Needs as a Required or Elective Course

Variable	<i>f</i>	%
Course Completion		
Required	40	90.90
Elective	4	9.10

Research Objective Two

Research objective two employed the Borich needs assessment model to identify the discrepancy between importance and ability regarding specific disability categories. The Borich needs assessment model allowed for the identification of participants' self-perceived level of importance of 11 disability types identified by IDEA (2004) as well as their associated educational impacts. These included (a) ADHD, (b) autism spectrum disorder, (c) blindness or visual impairment, (d) deaf or hearing impairment, (e) emotional or behavioral disorder, (f) intellectual disability, (g) orthopedic impairment, (h) other health impairments (not including ADHD), (i) specific learning disabilities, (j) speech or language disabilities, and (k) traumatic brain injury. Due to its prevalence, ADHD was removed from Other Health Impairments and given a separate category within the instrument.

Participants were asked to describe the importance of each of the 11 disability categories on a scale of one to four, with one being *not relevant* and four being *very relevant*. Of the 11 disability types, *autism* ($M = 3.62$; $SD = 0.54$), *emotional or behavioral disorder* ($M = 3.58$; $SD = 0.61$), and *ADHD* ($M = 3.41$; $SD = 0.71$) were perceived to be of the greatest importance to participants. The three disability types perceived to be of lowest importance by participants were *orthopedic impairments* ($M = 3.06$; $SD = 0.93$), *other health impairments (not including ADHD)* ($M = 3.14$; $SD = 0.90$), and *traumatic brain injury* ($M = 3.15$; $SD = 1.00$). The mean level of importance for the 11 presented disability competencies was 3.34 ($SD = 0.18$) and ranged from 3.06 to 3.62 (see Table 1).

Participants were then asked to describe their perceived ability to teach each disability classification on a scale of one to four, with one being *not competent* and four being *extremely competent*. Of the perceived ability to teach different disability types, participants felt most competent when teaching students with *ADHD* ($M = 3.18$; $SD = 0.62$), *intellectual disability* ($M = 2.73$; $SD = 0.78$), and *autism* ($M = 2.71$; $SD = 0.70$). Participants reported the lowest self-perceived competence related to the disability categories of *traumatic brain injury* ($M = 1.91$; $SD = 0.91$), *blindness or visual impairment* ($M = 1.95$; $SD = 0.93$), and *deaf or hearing impairment* ($M = 2.03$; $SD = 0.89$). The mean level of ability of the 11 presented disability competencies was 2.48 ($SD = 0.38$) and ranged from 1.91 to 3.18 (see Table 1)

In analyzing the discrepancy between importance and ability, MWDS were determined for each disability type. The three disability types of the highest MWDS reported were *blindness or visual impairment* ($MWDS = 4.59$), *deaf or hearing impairment* ($MWDS = 4.17$), and *traumatic brain injury* ($MWDS = 3.91$) (see Table 3).

Table 3

Mean Weighted Discrepancy Scores regarding Louisiana SBAE Teachers' Perceived Level of Importance and Ability when Working with Students with Special Needs (n = 79)

Rank	Competency	MWDS	Importance		Ability		f
			M	SD	M	SD	
1	Blindness or Visual Impairment	4.59	3.33	1.00	1.95	0.93	79
2	Deaf or Hearing Impairment	4.17	3.29	1.00	2.03	0.89	79
3	Traumatic Brain Injury	3.91	3.15	1.00	1.91	0.91	79
4	Autism	3.44	3.62	0.54	2.71	0.70	79
5	Emotional or Behavioral Disorder	3.31	3.58	0.61	2.66	0.73	79
6	Speech or Language Disability	3.09	3.34	0.78	2.42	0.83	79
7	Specific Learning Disabilities	3.08	3.48	0.70	2.59	0.86	79
8	Intellectual Disability	2.08	3.35	0.72	2.73	0.78	79
9	Other Health Impairments (not including ADHD)	1.83	3.14	0.90	2.59	0.69	79
10	Orthopedic Impairment	1.63	3.06	0.93	2.53	0.81	79
11	Attention Deficit Hyperactivity Disorder (ADHD)	0.78	3.41	0.71	3.18	0.62	79
Mean rating for scales (Importance and Ability)			3.34	0.18	2.48	0.38	
Overall MWDS			2.84				

Research Objective Three

The third research objective sought to describe the discrepancy between participants' perceived degree of importance and ability regarding the 26 inclusion strategies as identified by Stair (2009) and Kessel (2005). Of the 26 competencies, three were reported to have the highest degree of perceived importance, which included *utilizing methods to foster a sense of acceptance and inclusion for a student with a disability while in the classroom* ($M = 3.70$; $SD = 0.55$), *implementing procedures outlined in a student's IEP* ($M = 3.67$; $SD = 0.57$), and *providing an inclusive classroom atmosphere for students with special needs* ($M = 3.65$; $SD = 0.56$). The three skill competencies with the lowest perceived importance by participants at the Louisiana Ag Teachers Conference events focused on teaching students with disabilities ($M = 3.26$; $SD = 0.75$), *receiving adequate education and training for teaching students with special needs through the [Louisiana Ag Teachers Conference] opportunities* ($M = 3.42$; $SD = 0.69$), and *successfully evaluating the academic performance of students who have special needs* ($M = 3.43$; $SD = 0.69$). The level of perceived importance that participants reported for competency skills related to inclusion practices ranged from 3.70 to 3.26 and had an average, or mean, of 3.56 ($SD = 0.62$).

Regarding ability, participants indicated the highest perceived ability in *modifying assignments or activities according to a student's IEP* ($M = 3.14$; $SD = 0.70$), *teaching students who possess any type of disability* ($M = 3.14$; $SD = 0.70$) and *providing an inclusive classroom atmosphere for students with special needs* ($M = 3.12$; $SD = 0.60$). Participants identified the lowest perceived ability in three competencies, which included *providing inclusive travel opportunities for students with disabilities in the FFA chapter* ($M = 2.58$; $SD = 0.85$), *providing accommodations for students when competing in FFA activities* ($M = 2.59$; $SD = 0.90$), and *understanding legal regulations of teaching students who possess special needs, not only in the classroom but also when including these students in FFA and SAE opportunities* ($M = 2.64$; $SD = 0.80$). The self-perceived ability of participants ranged from 3.14 to 3.58. The mean level of perceived ability of participants was 2.86 ($SD = 0.74$).

Regarding the discrepancy between importance and ability, strategies identified as the highest need were *understanding legal regulations of teaching students who possess special needs, not only in the classroom but also when including these students in FFA and SAE opportunities* ($MWDS = 3.54$), *receiving adequate education and training for teaching students with special needs through professional development* ($MWDS = 3.51$), and *providing accommodations for students when competing in FFA activities* ($MWDS = 3.31$) (see Table 4).

Table 4

Mean Weighted Discrepancy Scores regarding Louisiana SBAE Teachers' Perceived Level of Importance and Ability of Inclusions Strategies for Teaching Students with Special Needs

Rank	Competency	MWDS	Importance		Ability		f*
			M	SD	M	SD	
1	Understanding legal regulations of teaching students who possess special needs, not only in the classroom but also when including these students in FFA and SAE opportunities.	3.54	3.62	0.70	2.64	0.80	64
2	Receiving adequate education and training for teaching students with special needs through professional development.	3.51	3.42	0.69	2.39	0.76	72
3	Providing accommodations for students when competing in FFA activities.	3.31	3.53	0.55	2.59	0.90	64
4	Attending professional development events focused on teaching students with disabilities.	3.22	3.26	0.75	2.28	0.88	72
5	Understanding special education law.	3.22	3.62	0.57	2.74	0.69	72
6	Following the requirements found in special education law.	3.16	3.61	0.62	2.74	0.82	72
7	Providing inclusive travel opportunities for students with disabilities in the FFA chapter.	3.09	3.47	0.65	2.58	0.85	72
8	Providing accommodations for students when competing in SAE activities.	3.03	3.53	0.67	2.67	0.86	64

Rank	Competency	MWDS	Importance		Ability		<i>f</i> *
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
9	Identifying approved practices when teaching students with special needs.	2.68	3.50	0.62	2.73	0.74	64
10	Seeking out additional resources to better prepare oneself for teaching students with disabilities.	2.68	3.44	0.63	2.67	0.79	72
11	Creating accommodations for students with physical disabilities.	2.65	3.61	0.61	2.88	0.72	64
12	Utilizing methods of accommodating students with special needs in extended classroom environments.	2.61	3.62	0.60	2.91	0.79	64
13	How to best communicate with students with special needs when building a mentorship.	2.59	3.61	0.63	2.89	0.73	64
14	Creating a least restrictive classroom environment for all students.	2.54	3.61	0.70	2.91	0.58	64
15	Involving students with special needs in the FFA chapter.	2.43	3.64	0.56	2.97	0.80	72
16	Providing physical accommodations for students with special needs.	2.38	3.57	0.60	2.90	0.70	72
17	Implementing procedures outlined in a student's IEP.	2.35	3.67	0.57	3.03	0.80	64
18	Utilizing methods of accommodating students with special needs while in the classroom.	2.03	3.61	0.55	3.05	0.65	64
19	Providing appropriate learning opportunities for all students.	1.96	3.63	0.59	3.08	0.69	72
20	Providing an inclusive classroom atmosphere for students with special needs.	1.93	3.65	0.56	3.12	0.60	72
21	Modifying assignments or activities according to a student's IEP.	1.71	3.61	0.62	3.14	0.70	72
22	Managing behavior of students with special needs.	1.62	3.53	0.63	3.07	0.68	72
23	Teaching students who possess any type of disability.	1.59	3.58	0.62	3.14	0.70	72
24	Effectively participating in IEP development procedures.	1.40	3.47	0.71	3.07	0.76	72
25	Successfully evaluating the academic performance of students who have special needs.	1.29	3.43	0.69	3.06	0.69	72
26	Utilizing methods to foster a sense of acceptance and inclusion for a student with a disability while in the classroom.	1.19	3.70	0.55	3.19	0.73	64
Mean rating for scales			3.56	0.62	2.86	0.74	

Rank	Competency	MWDS	Importance		Ability		f*
			M	SD	M	SD	
(Importance and Ability)							
Overall MWDS		2.45					

Note. Importance Scale: 1 = *Not Important*, 2 = *Slightly Important*, 3 = *Moderately Important*, 4 = *Extremely Important*; Ability Scale: 1 = *No Ability*, 2 = *Slight Ability*, 3 = *Moderate Ability*, 4 = *Extremely Able*. *Participant frequency varied due to participant’s incompleteness of the second chart of presented competencies.

Conclusions, Discussions, Recommendations

The purpose of this investigation was to describe Louisiana SBAE teachers’ (a) previous education regarding teaching students with special needs and (b) desired professional development opportunities regarding accommodating those students in the classroom. As a result of this investigation, we concluded that most teachers completed some special education coursework in a teacher preparation program. However, discrepancies existed among participants as they engaged in sensemaking concerning their confidence in teaching students with special needs (Weick, 1995). We interpreted this as indicating a need for professional development for teachers in Louisiana. This supported the findings of previous investigations in agricultural education (Aschenbrener et al., 2010; Faulkner & Baggett, 2010; Kessell et al., 2009; Ruhland & Bremer, 2002; Stair et al., 2019).

Research objective one sought to describe the education received by Louisiana SBAE teachers about teaching students with special needs. The majority of participants indicated they had completed some coursework designed to prepare them to teach students with special needs. However, most participants who completed coursework reported they had only completed one special education course during their teacher preparation program. This conclusion was consistent with prior research that has indicated preservice coursework in special education has often been required; however, the training may not have been extensive enough to help teachers feel adequately prepared (Faulkner & Baggett, 2010; Kessell et al., 2009; Ramage et al., 2021, 2022; Stair et al., 2019). Therefore, we concluded that even if participants received preservice education focused on teaching students with special needs, the limited extent of the course may not have provided adequate time for developing teachers’ positive perceptions and strategies to accommodate students with special needs.

Research objective two described the discrepancies between participants’ perceived importance and ability when teaching students with disabilities based on 11 disability types. Of the 11 disability types, participants indicated the most significant discrepancies were for blindness or visual impairment, deaf or hearing impairment, and traumatic brain injury. This discrepancy further reiterated the overarching professional development needs of SBAE teachers in Louisiana when teaching students with special needs – a finding aligned with prior research (Stair et al., 2016). Kessell (2005) reported that nearly 20% of preservice teachers identified a lack of confidence when teaching students who were deaf or had a hearing impairment. Because accommodating these disability types requires advanced training, this need should be addressed through professional development moving forward (RMTC-D/HH, 2020). In Louisiana, blindness and low vision have historically represented less than 5% of the total student population (Louisiana Department of Education, 2019). However, even with its low prevalence, findings from this investigation indicated accommodating students with more severe disabilities has left teachers unprepared to address such in their classrooms. In many instances, professional development on special education has been too broad and only addressed an overview of special education. Based on this study’s results, providing specialized professional development geared to each disability type may be a more effective option to prepare teachers to teach diverse learners.

Research objective three described the discrepancy between participants' perceived importance and ability when implementing inclusive strategies in their classrooms and programs. Of the included strategies, participants identified the greatest discrepancy in the following areas: *understanding legal regulations of teaching students who possess special needs, not only in the classroom but also when including these students in FFA and SAE opportunities* (MWDS = 3.54), *receiving adequate education and training for teaching students with special needs through professional development opportunities*, and *providing accommodations for students when competing in FFA activities*. Conclusions of the investigation aligned with prior work by Hoerst and Whittington (2009), who found 80% of Ohio SBAE teachers indicated a need for additional training when engaging students in the FFA program. FFA involvement has been considered a critical component of all students' experience in a total agricultural education program (Croom & Flowers, 2001; NAAE, 2021). If SBAE teachers do not feel competent when accommodating students in FFA activities, students with special needs may be less likely to be included in such events. Therefore, more training is needed within areas of special education that directly influence teachers' perceptions and students' experiences in the SBAE program (Johnson et al., 2012; McCray & McHatton, 2011). Although this investigation builds on previous work in the state regarding the lack of education and training of SBAE teachers (Stair et al., 2016), it also expanded knowledge regarding the disability types and inclusive strategies teachers desired to gain more insight through professional development.

Each year, the number of students with special needs has increased in U.S. public schools, resulting in a record high of 14% of students with a documented disability during the 2018–2019 school year (NCES, 2020). With the rise of this population, Pirtle (2012) identified an immediate need to ensure SBAE classrooms promote the inclusion of all students. To address this need, teacher preparation programs should expand opportunities for preservice teachers to gain confidence and experience accommodating students with disabilities (Stair, 2009). We also recommend teacher preparation courses tailor instruction based on the disability types of students, accommodation methods, and inclusive strategies. However, pre-service education methods are insufficient to ensure teachers are fully prepared to teach various students. Therefore, we recommend that diverse professional development be offered in Louisiana to support SBAE teachers better as they accommodate the various disability types of students identified in this investigation.

We also recommend that this study be replicated to identify the education and professional development needs of SBAE teachers when accommodating students with special needs at the regional and national levels. Further, the investigation of the professional development needs of SBAE teachers should be conducted regularly to determine the changing needs of the profession when teaching students with exceptionalities (Roberts et al. 2020a, 2020b). Licensure programs, both traditional and alternative, should also ensure preservice teachers have been provided with educational experiences that incorporate meaningful content and classroom observations that feature teaching students with special needs. Additionally, curricular experiences in teacher preparation programs should not only prepare teachers to successfully teach students with a disability in the classroom successfully but also in laboratories, Supervised Agricultural Experiences (SAEs), and the FFA (Hoerst & Whittington, 2009; Kessell et al., 2009). In addition, coursework should provide instruction on the federally recognized disability types and the legalities teachers may face when accommodating students. We also recommend preservice teachers complete classroom observations to gain more experience observing successful strategies to accommodate students with special needs. Finally, it should be noted that a limitation of this study was that social desirability bias could have influenced participants' responses in this investigation, i.e., they may have provided responses they perceived the research desired due to societal expectations regarding accommodating students with disabilities. As such, the result of this investigation should be interpreted with this limitation in mind.

References

- Alquraini, T., & Gut, D. (2012). Critical components of successful inclusion of students with severe disabilities: Literature review. *International Journal of Special Education*, 27(1), 42–59. [https://files.eric.ed.gov/fulltext/EJ979712.professional development](https://files.eric.ed.gov/fulltext/EJ979712.professional%20development)
- Aschenbrenner, M., Garton, B., & Ross, A. (2010). Early career agriculture teachers' efficacy toward teaching students with special needs. *Journal of Agricultural Education*, 51(4), 105–117. <https://doi.org/10.5032/jae.2010.04105>
- Birman, B. F., Desimone, L., Porter, A. C., & Garet, M. S. (2000). Designing professional development that works. *Educational Leadership*, 57(8), 28–33. [http://www.ascd.org/ASCD/professional development/journals/ed_lead/el200005_birman.professional development](http://www.ascd.org/ASCD/professional%20development/journals/ed_lead/el200005_birman.professional%20development)
- Borich, G. D. (1980). A needs assessment model for conducting follow-up studies. *Journal of Teacher Education*, 31(3), 39–42. <https://doi.org/10.1177%2F002248718003100310>
- Bowling, A. and Ball, A. (2020). Supporting students' psychological needs and motivation within school based agricultural education programs: A mixed methods study. *Journal of Agricultural Education*, 61(2), 206–221. <https://doi.org/10.5032/jae.2020.02206>
- Croom, D. B., & Flowers, J. L. (2001). Factors influencing an agricultural education students' perception of the FFA organization. *Journal of Agricultural Education*, 42(2), 28–37. <https://doi.org/10.5032/jae.2001.02028>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys the tailored design method* (4th ed.). Wiley.
- Dormody, T. J., Seevers, B. S., Andreasen, R. J., & VanLeeuwen, D. (2006). Challenges experienced by New Mexico agricultural education teachers in including special needs students. *Journal of Agricultural Education*, 47(2), 93–105. <https://doi.org/10.5032/jae.2006.02093>
- Easterly, R. G., & Myers, B. E. (2011). Inquiry-based instruction for students with special needs in school based agricultural education. *Journal of Agricultural Education*, 52(2), 36–46. <https://doi.org/10.5032/jae.2011.02036>
- Easterly, R. G., & Myers, B. E. (2018). Personal resilience as a predictor of professional development engagement and career satisfaction of agriscience teachers. *Journal of Agricultural Education*, 59(1), 119–134. <https://doi.org/10.5032/jae.2018.01119>
- Easterly, R. G. T., & Myers, B. E. (2019). Professional development engagement and career satisfaction of agriscience teachers. *Journal of Agricultural Education*, 60(2), 69–84. <https://doi.org/10.5032/jae.2019.02069>
- Faulkner, P., & Baggett, C. (2010). Preparing future secondary agricultural education teachers to work with students with learning disabilities: Reports from teacher educators. *Journal of Agricultural Education*, 51(3), 88–99. <https://doi.org/10.5032/jae.2010.03088>
- Garton, B. L., & Chung, N. (1997). An assessment of the inservice needs of beginning teachers of agriculture using two assessment models. *Journal of Agricultural Education*, 38(3), 51–58. <https://doi.org/10.5032/jae.1997.03051>

- Hansen, D. M., Larson, R. W., & Dworkin, J. B. (2003). What adolescents learn in organized youth activities: A survey of self-reported development experiences. *Journal of Research on Adolescence*, 13(1), 25–55. <http://youthdev.illinois.edu/wp-content/uploads/2013/10/Hansen-Larson-Dworkin-2003-What-Adolescents-Learned-in-Organized-Youth-Activities.professional-development>
- Harvey, M. W. (2001). The efficacy of vocational education for students with disabilities concerning post-school employment outcomes: A review of the literature. *Journal of Industrial and Teacher Education*, 38(3), 25–44. <https://scholar.lib.vt.edu/ejournals/JITE/v38n3/harvey.html>
- Hoerst, C., & Whittington, S. (2009). The current status of classroom inclusion activities of secondary agriculture teachers. *Journal of Agricultural Education*, 50(2), 38–51. <https://doi.org/10.5032/jae.2009.02038>
- Individuals with Disabilities Education Act (IDEA), 20 U.S.C. § 300.8 (2004). <https://sites.ed.gov/idea/regs/b/a/300.8#>
- Johnson, L., Wilson, E., Flowers, J., & Croom, B. (2012). Perceptions of North Carolina high school agriculture educators regarding students with special needs participating in supervised agriculture experiences and FFA activities. *Journal of Agricultural Education*, 53(4), 41–54. <https://doi.org/10.5032/jae.2012.04041>
- Kessell, J., (2005). *Agricultural education student teachers' confidence and knowledge: Teaching special needs students*. [Doctoral dissertation, Texas Tech University]. <http://hdl.handle.net/2346/1368>
- Kessell, J., Wingenbach, G., & Lawver, D. (2009). Relationships between special education confidence, knowledge, and selected demographics for agricultural education student teachers. *Journal of Agricultural Education*, 50(2), 52–61. <https://doi.org/10.5032/jae.2009.02052>
- Louisiana Department of Education. (2019). *2017-18 Louisiana special education data profile*. Louisiana Believes. https://www.Louisianabelieves.com/docs/default-source/academics/2017-18-special-education-data-profile.professional-development?sfvrsn=c4149f1f_8
- Linder, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 42(4), 43–53. [www.https://doi.org/10.5032/jae.2001.04043](https://doi.org/10.5032/jae.2001.04043)
- 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. <https://doi.org/10.5032/jae.2015.01043>
- McCray, E. D., & McHatton, P. A. (2011). “Less afraid to have “them” in my classroom”: Understanding pre-service general educators’ perceptions about inclusion. *Teacher Education Quarterly*, 38(4), 135–155. <https://files.eric.ed.gov/fulltext/EJ960622.professional-development>
- McKim, B. R., & Saucier, P. R. (2011). An Excel-based mean weighted discrepancy score calculator. *Journal of Extension*, 49(2). <http://www.joe.org/joe/2011april/tt8.php>

- McLeskey, J., & Weller, D. R. (2000). Block scheduling and inclusion in a high school: teacher perceptions of the benefits and challenges. *Remedial and Special Education, 21*(4) 209–221. <https://eric.ed.gov/?id=EJ611315>
- National Association of Agricultural Educators (NAAE). (2021). *What is agricultural education?* <https://www.naae.org/whatisaged/>
- National Center for Education Statistics (NCES). (2020). *Students with disabilities*. Institute for Education Sciences. U.S. Department of Education. [http://nces.ed.gov/pubs/2000/2000154.professional development](http://nces.ed.gov/pubs/2000/2000154.professional%20development)
- Pirtle, A. M. (2012). An exploration of agricultural education as an effective tool for developing students with special needs [Unpublished master's thesis]. University of Illinois at Urbana-Champaign.
- Resource Materials and Technology Center for Deaf/Hard of Hearing (RMTTC-D/HH). (2020). *Customized professional development for YOU!* <https://docs.google.com/document/d/1XQN1GtMNiM0q-htkL9d2A8tuXXIV2PxrM2xHVx6jt0k/export?format=professionaldevelopment>
- Ramage, R., Pigg, J., Roberts, R., & Stair, K. S. (2023). Coping with transitions during the COVID-19 global pandemic: A case study of early career teachers' experiences in secondary agricultural education. *Journal of Agricultural Education, 64*(2), 42-55. <https://jaeonline.org/index.php/jae/article/view/108>
- Ramage, R., Roberts, R., & Stair, K. S. (2021). Accommodating students with exceptionalities in secondary agricultural education: Experiences during student teaching. *Journal of Agricultural Education, 62*(4), 207-220. <https://doi.org/10.5032/jae.2021.04207>
- Ramage, R., Stair, K. S., Roberts, R., & Blackburn, J. J. (2022). Female agricultural teachers' lived experiences and perceived professional development needs when teaching students with special needs. *Journal of Agricultural Education, 63*(4), 105-118. <https://doi.org/10.5032/jae.2022.04105>
- Roberts, R., & Stair, K. S., Granberry, T. (2020a). Images from the trenches: A visual narrative of the concerns of preservice agricultural education teachers. *Journal of Agricultural Education, 61*(2), 324-338. <https://doi.org/10.5032/jae.2020.02324>
- Roberts, R., Wittie, B., Stair, K., Blackburn, J., and Smith, E. (2020b). The dimensions of professional development needs for secondary agricultural education teachers across career stages: A multiple case study comparison. *Journal of Agricultural Education, 61*(3), 128–143. <https://doi.org/10.5032/jae.2020.03128>
- Ruhland, S. K., & Bremer, C. D. (2002). Professional development needs of novice career and technical education teachers. *Journal of Career and Technical Education, 19*(1). <http://doi.org/10.21061/jcte.v19i1.656>
- Saleh, A. & Bista, K. (2017). Examining factors impacting online survey response rates in educational research: Perceptions of graduate students. *Journal of Multidisciplinary Evaluation, 13*(29), 63–74. https://journals.sfu.ca/jmde/index.php/jmde_1/article/download/487/439/

- Stair, K. (2009). *Identifying confidence levels and instructional strategies of high school agriculture education teachers when working with students with special needs* [Doctoral dissertation, North Carolina State University]. <http://www.lib.ncsu.edu/resolver/1840.16/3239>
- Stair, K. S., Blackburn, J. J., Bunch, J. C., Blanchard, L., Cater, M., & Fox, J. (2016). Perceptions and educational strategies of Louisiana agricultural education teachers when working with students with special needs. *Journal of Youth Development, 11*(1), 49–61. <https://doi.org/10.5195/jyd.2016.433>
- Stair, K., Figland, W., Blackburn, J., & Smith, E. (2019). Describing the differences in the professional development needs of traditionally and alternatively certified agriculture teachers in Louisiana. *Journal of Agricultural Education, 60*(3), 262–276. <https://doi.org/10.5032/jae.2019.0326>
- Stair, K. S., Moore, G. E., Wilson, B., Croom, B., & Jayaratne, K. S. U., (2010). Identifying confidence levels and instructional strategies of high school agricultural education teachers when working with students with special needs. *Journal of Agricultural Education, 51*(2), 90–101. <https://doi.org/10.5032/jae.2010.02090>
- Weick, K. E. (1995). *Sensemaking in organizations*. Sage.
- Wonacott, M. E. (2001). Students with disabilities in career and technical education. *ERIC Digest*. 1–7. [https://files.eric.ed.gov/fulltext/ED459324.professional development](https://files.eric.ed.gov/fulltext/ED459324.professional%20development)
- United States Department of Education (USDOE). (2010). *Thirty-five years of progress in educating children with disabilities through IDEA*. Office of Special Education and Rehabilitation Services. <https://www2.ed.gov/about/offices/list/osers/idea35/history/idea-35-history.professionaldevelopment>