

**Engaging Diverse Learners in School Based Agricultural Education - A Case Study
Identifying Successful Instructional Strategies for Students with Learning Difficulties in
Secondary Agricultural Education**

by

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Abstract

Agricultural Education provides a hands-on learning atmosphere for students in a public-school setting for kindergarten through twelfth grade in Georgia. School-Based Agricultural Education exists to promote career skills, leadership development, and personal growth through the context of industry relevant agricultural practices. Students enrolled in agricultural education classes vary academically and can be classified as general education, resource with paraprofessional support, or inclusion; inclusion students are often on the autism spectrum. The purpose of this study was to identify and organize best practices and instructional materials for School Based Agricultural Education teachers at the secondary level to differentiate their classroom instructional materials and classroom culture to positively benefit students with learning difficulties, specifically in the context of the three-component model. Participants in the study were identified by State Agricultural Education staff as being proficient in differentiation with diverse learners. This case study was modeled after Yin's Case Study Research Methods. Teachers were contacted by their school email listed on the Georgia FFA website for participation in the study. Interviews were recorded and semi-structured, using interview questions provided as a guide. Teachers identified as being proficient at differentiating provided evidence of differentiation techniques and methods through lesson plans, project rubrics, and interview transcripts. Major themes identified in the study include: Buddy System, Relationships are Foundational, SAE for All or Nothing, Facility Accessibility, Skills over Mastery, Redirection is a Correction, Representation Matters, and Teacher Limitations.

AI Disclosure Statement

In the preparation of this dissertation, no Artificial Intelligence (AI) tools were used.

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“Twenty years from now you will be more disappointed by the things that you didn’t do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover.” - **Mark Twain**

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List of Abbreviations

AFNR	Agriculture, Food, and Natural Resources
CDE	Career Development Event
CTAE	Career, Technical, and Agricultural Education
FAPE	Free and Appropriate Public Education
IEP	Individualized Education Plan
IDEA	Individuals with Disabilities Education Act
LDE	Leadership Development Event
LRE	Least Restrictive Environment
NFFA	National FFA Organization
PBL	Project-Based Learning
SAE	Supervised Agricultural Experience
SBAE	School Based Agricultural Education
504	Section 504
SCT	Social Constructivism Theory
ZPD	Zone of Proximal Development
POW	Program of Work
AI	Artificial Intelligence

Chapter 1: Foreword

Introduction

Agricultural education is a part of the Career, Technical, and Agricultural Education program that engages students in career ready skill development courses. Agriculture education formally began with the Smith-Hughes Act of 1917 and currently exists on the secondary level, offered to grades sixth through twelfth. In the last five years, elementary agricultural education has been introduced and formally acknowledged by the Georgia Department of Education.

Students in a singular classroom can have a range of academic, emotional, physical, and mental abilities. Historically, these gaps in development are addressed through an Individualized Education Plan (IEP) or 504 plan, detailing a student's civil rights as pertaining to accommodating their disability and providing them with a Free and Appropriate Education (FAPE). The classroom instructor is legally tasked with accommodating those education plans and modifying any classroom materials to meet those students' needs. Agricultural education is a melting pot of individuals. At the secondary level, students enrolled in SBAE are receiving either an elective course credit or a high school equivalent science credit. While accommodations outlined in an IEP or 504 are mandated, an educator can and should modify their curriculum and environment to fully engage each student, regardless of ability.

This case study highlights the total program model in agricultural education, leadership opportunities in the National FFA Organization, and differentiated classroom instruction techniques for including diverse learners. The intended purpose of this case study was to understand best practices for including diverse learners in the SBAE program through the accounts of teachers who were identified as being an exemplar teacher for differentiation.

Researcher's Interest

As a middle grades agricultural educator with six years of teaching experience, across three buildings, two greenhouses, one forestry plot, and a lot of lost and found in between, the researcher has seen every ability step through the doorway of her classroom. The law explicitly states that all students are entitled to a free public education with as few restrictions as necessary and as much opportunity afforded as possible. In her time as an educator, the researcher has found a love for teaching students with special needs, language barriers, and behavioral disorders. The researcher's spouse is also a teacher at the same school; his certification is for special education with a focus in psychology. The researcher and spouse often share students, allowing for more detailed and specialized approaches with two teachers designing a classroom environment that fully benefits students' needs and abilities.

In the past two years, the researcher has taken on two, 9-week rotations with the self-contained autism classroom for inclusion in the SBAE program; these rotations last one school quarter and allow individuals to practice social and career-readiness skills alongside other students in their age group. With intentionally involving self-contained students, the researcher found agricultural education curriculum lacking in targeted content for diverse populations. Specifically, most curriculum materials developed for special needs learners resembled coloring activities. The researcher believes that each child can learn the standards presented in a SBAE classroom, and that it's up to the instructor to make that information accessible to them. Considering the researcher's personal connection to special education students and desire for classroom curriculum to be accessible, the basis of this case study was created.

Framework

The framework used in this study was Lev Vygotsky's Social Constructivism Theory (1962). Social Constructivism Theory maintains that learning occurs through social interaction, internal reflection of experiences and interactions, the zone of proximal development, and scaffolding of curriculum (1962). Vygotsky proposed that learning and development coincide and cannot exist without the other, which is identified as the zone of proximal development; the zone of proximal development (ZPD) is the distance between what a student can do independently with no support, what a student can do with assisted support, and what a student cannot do even with assistance (Vygotsky, 1978). Additionally, Vygotsky outlined scaffolding as a tool for learners to complete manageable tasks in order to reach an educational goal, working alongside an instructor or knowledgeable peer to assist in making connections through the learning process (Vygotsky, 1978).

This framework was applied in the study, as it provided the foundation to analyze what techniques and/or methods of teaching allowed for the intentional engagement of diverse learners in secondary SBAE programs in Georgia. Furthermore, this framework helped the study analyze best practices for engaging diverse learners in secondary SBAE programs in Georgia with the intent to organize and disperse resources to agricultural educators for intentional student support.

Purpose

The purpose of this dissertation was to determine successful strategies for engaging special needs learners in the School Based Agricultural Education program at the secondary level in Georgia. This case study was designed to investigate successful strategies for engaging diverse learners in the three-component model; specifically to: identify what FFA competitions currently exist to enrich Alternative learners' experience in the NFFA, identify what nontraditional

leadership opportunities exist in the School Based Agriculture Education classroom for students with disabilities, identify actively operating project-based learning strategies used in School Based Agriculture Education classrooms specifically with students with disabilities, and investigate various instructional strategies to gauge students with disabilities' success in a School Based Agriculture Education classroom.

Organization

This dissertation was organized into five chapters. The first chapter included the introduction to the study and established the foundation for the subsequent chapters. The second, third, and fourth chapters were presented as separate articles but remain connected to the primary research focus, identifying best practices for engaging diverse learners in secondary School Based Agricultural Education programs in Georgia. The fifth and final chapter provided a summary of the findings from each article and offered recommendations for further research and practice.

Research Objectives

This study was divided into three separate but interconnected articles focusing on best practices for engaging diverse learners in secondary School Based Agricultural Education programs in Georgia. It began with Article One, which presented a historical analysis of the three-component model in agricultural education and the inclusion of special needs learners in general education settings. Article Two examined Project-Based Learning and Supervised Agricultural Experience projects, and Article Three highlighted best practices for curriculum instruction in an agricultural education classroom setting as well as leadership opportunities for diverse learners in the National FFA Organization. The research objectives listed below were used to guide the development of this study:

Article 1

1. Who are the individuals involved in best practices for teaching diverse learners in School Based Agriculture Education for this case study?
2. How does the population of diverse learners in a School Based Agriculture Education classroom shift the curriculum?
3. How are diverse learners involved in the National FFA Organization through CDE/LDE?

Article 2

1. What supports are available for the accessibility and accommodation of Career, Technical, and Agricultural Education specific facilities for diverse learners?
2. How is project-based learning used to engage diverse learners in School Based Agriculture Education?
3. What supports are provided for diverse learners to the School Based Agriculture Education teacher?
4. What classroom management strategies benefit diverse learners in the School Based Agriculture Education classroom?

Article 3

1. How long have the case study participants worked with diverse learners in a School Based Agriculture Education program?
2. What educational and preparation supports are provided to School Based Agriculture Education teachers for diverse learners?
3. How are specific instructional strategies used to positively impact diverse learners in a School Based Agriculture Education classroom?

Definitions

1. Agricultural Education: “a systematic program of instruction available to students desiring to learn about the science, business, technology of plant and animal production and/or about the environmental and natural resources systems” (National FFA Organization, n.d.).
2. Career Development Event: “designed to prepare students for a career in agriculture by testing and challenging the student's technical, leadership, interpersonal and teamwork skills as well as their knowledge of the subject matter” (Texas FFA Association, 2025).
3. Career, Technical, and Agricultural Education: “Career Technical and Agricultural Education (CTAE) is a program of study that involves a multi-year sequence of courses that integrates core academic knowledge with technical and occupational knowledge” (Georgia Department of Juvenile Justice, 2025).
4. Free and Appropriate Public Education: “the provision of regular or special education and related aids and services designed to meet the student's individual educational needs as adequately as the needs of nondisabled students are met” (U.S. Department of Education, 2025).
5. Individualized Education Plan: “a collaborative document developed between school and service personnel (which may include special education teachers, general education teachers, administrators, related services providers and others) and a student’s family. IEPs are reviewed by all parties’ multiple times throughout a year, with changes made as appropriate to ensure a student is meeting their educational goals” (Council for Exceptional Children, 2025).

6. Individuals with Disabilities Education Act: “a law that makes available a free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services to those children, supports early intervention services for infants and toddlers and their families, and awards competitive discretionary grants” (U.S. Department of Education, 2025).
7. Leadership Development Event: “focus on creating situations for students to demonstrate their abilities in public speaking, decision making, communication and their knowledge of agriculture and the FFA organization” (Texas FFA Association, 2025).
8. Least Restrictive Environment: “the requirement in federal and state law that students with disabilities receive their education, to the maximum extent appropriate, with nondisabled peers. Special education students should not be removed from general education classes unless, even with supplemental aids and services, education in general classes cannot be achieved satisfactorily” (Disability Rights California, 2025).
9. National FFA Organization: “a dynamic youth organization that changes lives and prepares members for premier leadership, personal growth and career success through agricultural education” (National FFA Organization, n.d.).
10. Project-Based Learning: “a teaching method in which students learn by actively engaging in real-world and personally meaningful projects” (Buck Institute for Education, 2024).
11. School Based Agricultural Education: “students engage a wide variety of skills, including science, math, communications, leadership, management and technology. Agricultural education is delivered through three interconnected components: Classroom or laboratory instruction, Experiential learning, and Leadership education” (National Association of Agricultural Educators, 2025).

12. Section 504 of the Rehabilitation Act of 1973: “a federal law designed to protect the rights of individuals with disabilities in programs and activities that receive Federal financial assistance from the U.S. Department of Education” (U.S. Department of Education, 2025).
13. Social Constructivism Theory: “a theoretical framework in social science research that explores how knowledge, identity, and reality are constructed through social interactions and cultural contexts” (Vygotsky, 1962).
14. Zone of Proximal Development: “an educational concept introduced by Vygotsky. This "zone" represents a critical area for skill development, where tasks are challenging yet achievable with support, fostering growth and learning” (Vygotsky, 1962).

Limitations

While this study provided valuable insight into best practices for engaging diverse learners in secondary School Based Agricultural Education (SBAE) in Georgia, four limitations were present:

The study was limited to a selective sample of Georgia Agricultural Educators, specifically six female SBAE teachers at the middle and high school level. Approximately 51% of Georgia SBAE teachers are female. This study only represented the female perspective. This case study provided six exemplars for future research in differentiation methods for SBAE programs at the secondary level in Georgia and is not trying to generalize beyond the participants. Therefore, nonresponse error is not a concern with this study (Lindner et al., 2001).

A potential bias is assumed with how participants were identified. Georgia State Agricultural Education staff were asked to identify exemplars they felt differentiated the SBAE program well for diverse learners based on personal experience and opinion.

Due to the spontaneous nature of SBAE teacher's schedules, interviews between the researcher and the case study participant ranged from thirty minutes to an hour and a half. More data could potentially have been collected if more time was available for the interview.

As part of their differentiation methods, some teachers utilized online resources like TeachersPayTeachers and One Less Thing to provide scaffolded material through their curriculum instruction for identified diverse learners; as such, those materials were not directly available to the researcher to be analyzed in the study due to copyright.

Chapter 2: Leadership Opportunities for Students with Disabilities in a School Based Agricultural Education Classroom through the Three-Component Model

Abstract

Agricultural education courses at the secondary level introduce individuals to the agricultural industry through the three-component model (National FFA Organization, n.d.). The purpose of this study was to identify what leadership opportunities currently exist to enrich diverse learners' experience in the three-component model in Georgia secondary SBAE programs. The study was framed by social constructivism theory (SCT) (Vygotsky, 1962). SCT (Vygotsky, 1962) revolves around the belief that learning occurs through social interactions. Case Study Methodology (Yin, 2018) was used to capture six exemplar's best practices for engaging diverse learners in secondary SBAE. Three themes were identified: Redirection is a Correction, Teacher Limitations, and Representation Matters. Recommendations for future research and practice include investigating the success of SBAE curriculum resources prepared by the GADOE, with specific attention to resources benefitting diverse learners in Georgia's secondary SBAE programs. Additionally, the researcher recommends that the GVATA host or facilitate training for secondary SBAE teachers in differentiating for diverse learners at least once a year, with training specifically for classroom management, curriculum modifications, SAE project plans, and means to make SBAE facilities accessible.

Key Words

School Based Agricultural Education, National FFA Organization, three-component model, Supervised Agricultural Experience

Introduction

Agricultural Education (AGED) programs are often the melting pot of secondary education (National FFA Organization, n.d.). Future tradesmen, hobby farmers, artists, wallflowers, and social butterflies alike can find themselves seated together amongst four walls. In Career, Technology, and Agricultural Education (CTAE), school based agricultural education (SBAE) offers opportunities for skill development and career exploration (Eck & Davis, 2024; Ireland, 2022). AGED curriculum relies on hands-on application and has shown positive outcomes for students with diverse learning needs (Harvey, 2001; McLeskey & Weller, 2000; Ramage-Martin et al., 2025). SBAE program demographics are shifting. Program enrollment reported almost one-fifth of SBAE students in the United States have an identified learning disability as of 2011 (Easterly & Myers, 2011; Ramage-Martin et al., 2025).

As a transferrable skills course, SBAE serves as a prime location for the inclusion of diverse learners and/or self-contained students to work on social, emotional, and skill development amongst students of various academic ability in a general education setting without traditional academic pressure (Clemons et al., 2024; Hancock et al., 2024; Norris et al., 2025; Smith et al., 2024). Individualized Education Plans, 504s, accommodations, modifications, learning supports, inclusion students, various degrees of Autism – each identifier is often represented in a transferrable skill course environment like SBAE (National Center for Learning Disabilities, 2024). Through transferrable skill curriculum, students can adapt their behavior and speech to the environment; meaning, students of all abilities can create natural connections through practical activities with their environment (Cole et al., 1978; Harvey, 2001; McLeskey & Weller, 2000; Ramage et al., 2021).

The Individuals with Disabilities Act (IDEA) exists to provide students and guardians with access to Free and Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE) (U.S. Department of Education, 2025). Students served through IDEA are supported through Individualized Education Plans (IEP) (U.S. Department of Education, 2025). Common inclusion practice for IEP learners in a general education classroom limits numbers the maximum extent appropriate and consistent with LRE (U.S. Department of Education, 2025).

Historically, agricultural education has followed the three-component model as the program standard (Croom, 2008; National FFA Organization, n.d.). The three-component model has an arguable introduction in history; however, its presence is evident in modern SBAE (Croom, 2008). FFA, SAE, and Classroom Instruction are the intracurricular components of SBAE (National FFA Organization, n.d.). Both the Smith-Hughes Act in 1917 and the Vocational Education Act of 1947 (Croom, 2008) established a permanent link between formal classroom instruction and modern agricultural practice.

Georgia counties are categorized as urban, suburban or rural. Of Georgia's 159 counties, 120 are considered rural; 21% of Georgia's population lives in a rural area according to the 2020 census. A 5% decline in rural population was noted when comparing the 2010 and 2020 census (U.S. Department of Health and Human Services, 2022). The increase in urban communities within the United States is reflected in current SBAE demographics (Martin et al., 2024). National FFA membership demographics shifted from 27% to 39% non-rural representation from 2015 to 2022; racial and ethnicity shifts were also presented with a 5.5% increase in diversity from 2017 to 2022 (Martin et al., 2024; National FFA Organization, 2017, 2015, 2022). With AGED and SBAE being historically grounded in rural agricultural practices, SBAE programs must adapt the total program to build connections between the rural origins of AGED

and the increase in urban populations (Elliot & Lambert, 2018; Martin et al., 2024; Martin & Kitchel, 2013).

As of the 2022-2023 school year, 7.5 million students ages 3-21 received special education services under the Individuals with Disabilities Education Act, roughly 15% of all public-school students (Irwin et al., 2024). The law states that students must have access to FAPE in LRE; students with learning disabilities enrolled in SBAE can typically perform well in consideration of the three-component model (Johnson et al., 2012). There is concern in NFFA competitive events for students with special needs competing against non-special needs students with an understanding that all students must be provided equal opportunities for involvement. Johnson et al.'s (2012) study reported a predominantly positive teacher perception for including students with special needs in SAE projects; teachers perceived students with special needs more so benefit from FFA participation (Johnson et al., 2012).

A Supervised Agricultural Experience (SAE) project is a student-led, instructor and/or guardian supervised, work-based learning experience that results in measurable outcomes within a predefined set of Agriculture, Food and Natural Resources (AFNR) Technical Standards and Career Ready Practices aligned to a career plan of study (SAE for All, 2017). SAE programs have been shown to be good economic investments of time and money (Hanagriff et al., 2010). The SAE for All program provides guidelines for making agricultural projects accessible for all students, regardless of race, gender, socioeconomic status, or ability. Students initially begin with a foundational agricultural project. In consideration of diverse learners in the SBAE program, modifications could be made in the educational intent of SAE projects. Current research debates the impact of the SAE project (Smith & Rayfield, 2016); should students enrolled in SBAE complete an agriculturally sound SAE project based on the class curriculum or

should the SAE project be used as an avenue to explore emerging agricultural concepts?

Educational reform and philosophical shifts will dictate the future intent of SAE; SBAE programs will have to determine if the educational intent of SAE remains intact to historical premise with room for modern advances (Smith & Rayfield, 2016).

The Georgia FFA Association provides members competing in Career and Leadership Development Events and the SAE awards program with a general accommodations statement. Advisors are required to submit written and detailed notice of a student's request for special accommodations in a competition environment; written notice must include documentation from the school system confirming IEP status. All accommodation requests must be submitted to the CDE/LDE superintendent no later than three weeks before the competition with preference being before registration is initially submitted (Georgia Agricultural Education, n.d.).

Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010); SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Miller et al., 2025; Ramage, 2021; Stair, 2009). There is consistent need for teacher preparation programs to provide experiences to preservice teachers in accommodating diverse learners (Aschenbrener et al., 2010; Roberts et al., 2020; Stair et al., 2012), however there is not enough current data to support whether preservice teacher training in accommodating diverse learners will help them overcome challenges associated with teaching diverse learners in the secondary SBAE program (Ramage et al., 2021).

Professional development and preservice training in accommodating diverse learners can have a positive impact on SBAE teachers' success in creating and maintaining an inclusive total program (Miller et al., 2025). A North Carolina study noted a statistically significant and positive relationship between SBAE teachers' time invested in professional development for diverse learners as well as a positive outlook on diverse learners' involvement in the NFFA (Johnson et al., 2012; Miller et al., 2025; Ramage, 2021). A study conducted with Louisiana AGED teachers with varying degrees of SBAE teaching experience shared a need for professional development focused on the inclusion of diverse learners (Ramage, 2021; Roberts et al., 2020). A study conducted by Aschenbrener et al. (2010) reported SBAE teachers had received some coursework pertaining to diverse learners, however early career teachers still struggled with accommodating diverse learners in the SBAE program. Current educational trends suggest the number of students requiring accommodations is likely to increase over time (Ramage et al., 2021), therefore confirming the need for professional development.

SBAE teachers' professional development needs differ based on their educational and demographic differences (Roberts et al., 2020). Foster et al.'s (2019) study noted that 74% of licensed educators who completed research requirements were female. Current research available on professional development needs specific to diverse learners for SBAE teachers represents an overwhelmingly male perspective (Aschenbrener et al., 2010; Dormody et al., 2006; Faulkner & Baggett, 2010; Giffing et al., 2010; Pense et al., 2012; Stair et al., 2010); Professional development should be a critical step for SBAE programs in the inclusion of diverse learners as deficiencies arise (Birman et al., 2000; Miller et al., 2025; Ramage et al., 2022). Effective professional development opportunities should represent SBAE teachers' current needs in accommodating diverse learners (Miller et al., 2025). Future qualitative research should be

conducted representing the female SBAE teacher perspective (LeJeune & Roberts, 2020; Ramage et al., 2022).

This study sought to build a case for best practices in engaging diverse learners in secondary Georgia SBAE programs in the context of the three-component model (National FFA Organization, n.d.). In the last ten years, SBAE research has focused on SAE for All and FFA career and leadership development events in the three-component model and how diverse learners can participate. This case study sought to identify immediate opportunities for diverse learners in the total SBAE program.

Theoretical Framework

This study was framed by social constructivism theory (SCT) (Vygotsky, 1962). Successful teacher-student engagement is essential for a productive classroom environment; instruction must be presented in an accessible way for all learning styles and abilities, while also maintaining a level of continued engagement for all academic abilities. SCT (Vygotsky, 1962) revolves around the belief that learning occurs through social interactions. This study was created to identify best practices for teaching students with diverse learning abilities in a secondary Georgia School Based Agriculture Education program (SBAE), specifically aligned within the three-component model. The National FFA Organization (n.d.) outlines the three-component model as AGED instruction delivered through three major components: classroom/laboratory instruction through inquiry-based learning, work-based learning through a supervised agricultural experience (SAE) program, and engagement in student leadership organizations like the NFFA. Each component of the model requires students to engage experientially with SBAE. Vygotsky (1968) outlined how speech follows actions, provoked by and dominated by activity. As a child ages, when speech is moved to the starting point of an

activity, a new relation between word and action emerges. As a student works through each piece of the three-component model, they are engaging with SBAE in similar but separate contexts that allow for language and skill development to occur during individual and group interactions (Miller, Clemons, McKibben, & Lindner, 2025; Miller, Clemons, McKibben, Cletzer, & Lindner, 2025) The Community of Inquiry (CoI) model (Garrison et al., 2001) mimics the intracurricular nature of the three-component model (National FFA Organization, n.d.). SCT (1978) states that learning coincides with interactions with individuals through shared experiences.

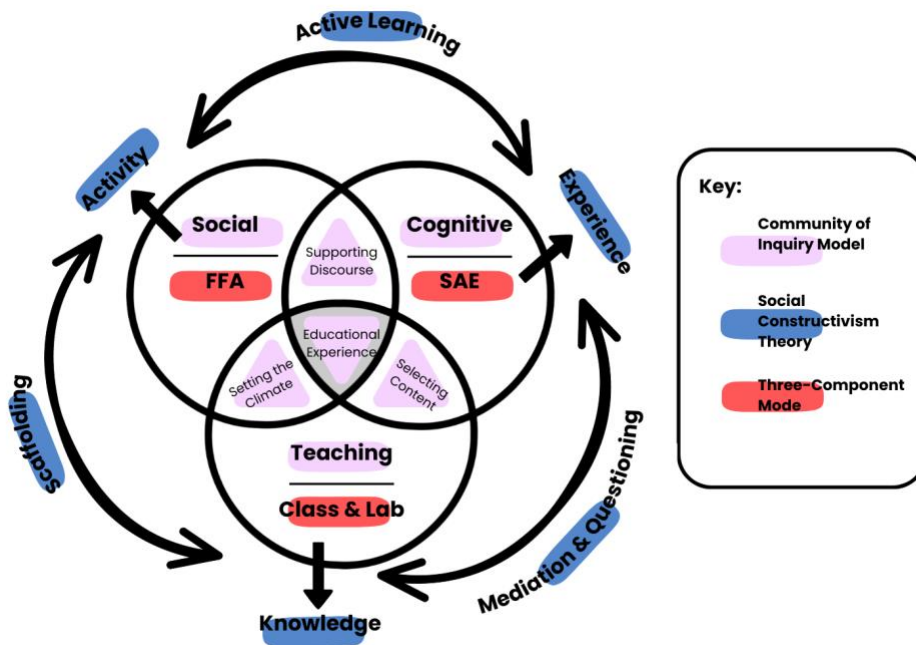
The CoI model (Garrison et al., 2001) and the three-component model (National FFA Organization, n.d.) both function in an overlapping three circle figure with each piece of the figure outlining the learning process occurring in a specific context. CoI (2001) involves educational experiences with a focus on social, cognitive, and teaching aspects, with overlaps in setting the climate, supporting discourse between individuals, and the selection of curriculum content. The three-component model (National FFA Organization, n.d.) further elaborates on the CoI (2001) model; social is represented by NFFA, cognitive is represented by SAE, and teaching is represented by classroom and laboratory instruction. Vygotsky's SCT (1968) provides perspective on how learning is expected to occur in the context of CoI (2001) and the three-component model (National FFA Organization, n.d.). Active learning for individuals is expected to occur through social youth development and cognitive SAE experience. Scaffolding is expected to occur between classroom and laboratory instruction and social youth development to ensure student success in engaging with SBAE and other individuals. Mediation and questioning are expected to occur between classroom and laboratory instruction and the cognitive SAE

experience; students are expected to rely on the knowledge earned through structured curriculum to guide a successful SAE.

Figure 2.1 depicts an overlap of these ideas to show the learning potential of individuals in the context of Vygotsky’s (1968) SCT, the three-component model (National FFA Organization, n.d.), and the CoI model (Garrison et al., 2001).

Figure 2.1

Interpretation of the Community of Inquiry model, Social Constructivism Theory, and the Three-Component Model



Note. Interpretation of The Community of Inquiry Model (Garrison et al., 2001), the Three-Component Model of Agricultural Education (National FFA Organization, n.d.), & Vygotsky’s Social Constructivism Theory (1968).

SBAE facilitates the instruction of transferrable skills that require students to both physically and mentally engage with a topic, therefore social connections and environmental awareness become nonnegotiable for all parties. This study also highlighted leadership opportunities for students with disabilities in a secondary SBAE classroom through the NFFA. The NFFA Organization provides competitive opportunities for students in sixth through 12th

grade through Career and Leadership Development Events, livestock showmen programs, SAE project record books and proficiency applications. In this competitive environment, students are tasked to compete individually or as a team in a career skill focused event; in preparing for competition, agricultural educators set aside extended day hours to host practices and mock competitions to better engage students with the skill material. SAE projects are implemented as an intracurricular program that engages students with agricultural concepts outside of school hours. Classroom instruction involves direct instruction of agricultural education curriculum outlined by the Department of Education.

Purpose

The purpose of this study was to identify what leadership opportunities currently exist to enrich diverse learners' experience in the context of the three-component model in Georgia secondary SBAE programs as well as identify what nontraditional leadership opportunities exist in the three-component model for diverse learners in Georgia secondary SBAE programs. The research objectives that guided this study included:

1. Determine characteristics of targeted secondary Georgia SBAE teachers.
2. Determine classroom and laboratory opportunities for diverse learners in the secondary Georgia SBAE program.
3. Identify SAE and CDE/LDE opportunities for diverse learners in secondary Georgia SBAE programs.

Methods

Most secondary agriculture education classrooms experience a varying population of individuals with learning difficulties (Hoerst & Whittington, 2009). This qualitative research study sought to understand best practices for engaging and differentiating the SBAE program

through Case Study Methodology (Yin, 2018) for diverse learners. This case study was approached as an exploratory study, to engage with teachers identified as best in their field in teaching diverse learners, for the purpose of identifying best practices for modifying SBAE instruction and the classroom environment. A descriptive analysis of individual teacher interviews allowed the case study to ascertain relevant themes that bring to light the art of teaching diverse learners.

Qualitative research is preferred when addressing building a case that investigates experiences or accounts of individuals (Creswell & Creswell, 2014). A case was built through interviews as the researcher sought to identify best practices for engaging diverse learners in secondary SBAE programs in Georgia as well as any curriculum or curriculum adaptations deemed successful by study participants. This part of the study aimed to specifically understand how students with learning difficulties, physical/mental disabilities, etc., are successfully included in the three-component model through exemplar teachers' point of view. Participants in the study ranged from four years of experience to twenty-one years of experience, providing an early career teacher's perspective as well as a veteran teacher's perspective on including diverse learners in the total SBAE program.

The case bounds involved interviewing certified secondary SBAE teachers in Georgia with the intent to identify best practices for engaging diverse learners in the 3-component model. Specifically, how diverse learners engage with AGED curriculum standards, participate in leadership and career development events, and complete an authentic SAE. The individuals identified for participation in the study were provided by state AGED staff; the request made to state AGED staff required identified teachers to be perceived as skilled at differentiating FFA, SAE, and classroom instruction specific to diverse learners. Participants in the study were asked

to complete an interview with the researcher and provide verbal examples of total program differentiation as well as tangible examples of differentiated SAE plans, curriculum assignments/rubrics/etc, and competition preparation do's and don'ts for diverse learners.

The case was structured as holistic-multi case. Yin states that case study is an empirical inquiry that investigates the case or cases and addresses the “how” or “why” questions concerning the identified area of interest (Yazan, 2015; Yin, 2002). Each of the six identified participants provided their context of how diverse learner can be and should be included in the 3-component model. Both an early career teacher and veteran teacher input was considered, as well as consideration for supplemental materials provided by participants highlighting differentiation. This study focused on the interviews conducted to build the case of how diverse learners are included in the secondary SBAE program in Georgia (Yin, 2002). Supplemental materials like lesson plans, project examples, and competition preparation materials were used to triangulate results and ensure validity. Yin suggests the use of six evidentiary sources in case study research: documentation, archival records, interviews, direct observations, participant observation and physical artifacts (2002); this study specifically utilized documentation, archived interview records, interviews, participant review of transcripts, and physical artifacts in the form of curriculum materials and/or CDE/LDE preparatory materials.

Instrumentation

Interviews were conducted with a researcher developed instrument with 36 open-ended questions. The researcher used semi-structured interview protocol to develop the instrument. This is a part of a larger study conducted to identify successful instructional strategies for students with learning difficulties in secondary agricultural education. Questions involved program and instructor characteristics, details regarding specialized curriculum and facilities,

differentiated SAE and FFA opportunities, participants' self-assessment of differentiation ability, and professional development opportunities in differentiation specific to SBAE. The instrument was developed using Yin's Case Study Methodology (2018) as a guide for identifying best practices for engaging diverse learners in the secondary Georgia SBAE program through exemplar perspectives.

Data Collection

Exemplar SBAE teachers were identified by Georgia SBAE state staff. The researcher asked state staff to identify middle school SBAE teachers who differentiated the SBAE program well for diverse learners. Limited middle school responses were received. The researcher asked state staff to additionally identify high school SBAE teachers who differentiated the SBAE program well for diverse learners. 13 total teachers were identified and represented secondary SBAE programs. 11 out of 13 teachers contacted responded as willing to participate in the case study; five of the 11 SBAE teachers agreed to participate in the study but did not complete an interview or provide supplemental materials, two of the 13 SBAE teachers did not respond when contacted. Participants in the study are active SBAE teachers in a secondary school.

Zoom interviews were conducted with six exemplar SBAE teachers. Case study participants were contacted at least one week prior to their scheduled interview; all participant interviews were completed within one month's time from the initial email invitation. For each interview, only the case study researcher and one SBAE teacher were present. All interviews were conducted in August of 2025 for a total run time of 6.78 hours, or 407 minutes.

Supplemental materials were requested at the end of each interview for triangulation of results. Supplemental materials provided proof of differentiation through modification in the SBAE program. These materials included: lesson plans, project rubrics, and assignment

examples. Two participants shared a teacher-created lesson resource. Four participants shared resources created by copyright sources like TeachersPayTeachers and OneLessThing; copyrighted resources included: scaffolded guided notes worksheet with a summative assessment, FFA emblem cut and paste activity, and an agricultural workbook for special needs students designed for grades kindergarten through fifth.

Participants

The researcher initially contacted state Agricultural Education staff to identify potential case study participants who taught middle school level SBAE and could be identified as proficient at differentiating the three-component model for diverse learners. With the limited number of middle school agriculture teachers identified by state staff, high school agriculture teachers, also identified as exemplars in differentiation by state staff, were contacted to increase case study responses based on state staff recommendations.

Of the 13 teachers identified by state staff, only two were middle school SBAE teachers. The researcher contacted all 13 teachers identified by state staff as exemplar teachers in differentiation. All 13 teachers were classified as secondary level SBAE teachers; secondary SBAE teachers are certified to teach sixth through twelfth grade AGED. 11 teachers responded as willing to participate in the study. Five of the 11 teachers who responded to the initial study invitation did not complete an interview or provide supplemental materials. Two of the 13 SBAE teachers contacted did not respond when contacted about study participation. 11 out of the 13 SBAE exemplar teachers identified as female; the two SBAE teachers that did not respond when contacted about study participation identified as male.

Data Analysis

Open, axial, and selective coding were used to review the data with each study participant over a two-week period post interview to ensure accuracy of themes (Fram, 2013). Participants were asked by the researcher to agree, disagree, or edit themes and codes to more precisely reflect what they meant to convey in their interview via member checking. Memos were recorded by the researcher during participant interviews; participant reactions, potential emerging themes, and relevant thoughts were recorded and uploaded to a secure Box Folder, as approved by IRB. Themes and codes were reviewed by the case study researcher and study participants on an individual basis to ensure accuracy (Creswell, 2009). The researcher sought to identify best practices for engaging diverse learners in the total SBAE program in secondary schools in Georgia from the view of exemplar SBAE teachers.

Trustworthiness was established through rich, thick descriptions using direct quotes throughout the study to provide a clear understanding of best practices for engaging diverse learners in secondary SBAE programs in Georgia, with specific interest in highlighting how diverse learners are included in the three-component model (Croom, 2008). These rich descriptions allow the reader to determine transferability and applicability of all findings (Guba, 1981). Reliability was established through a continuous review of the themes and codes with reflective memos, as well as review and debriefing with each interviewee and the advising graduate committee member to ensure transcribed interviews were accurate as well as final themes. Each study participant was contacted at least once post-interview to offer insight on provided interview transcriptions with identified codes and themes. Three participants accepted the codes and themes as presented, three participants provided further in-depth descriptions of program details that allowed for the expanding of themes to occur via member checking. Each of

the three participants who offered further feedback have taught in a Georgia secondary SBAE program for more than ten years. Of the three teachers who accepted the presented codes and themes as is, all have taught in a Georgia secondary SBAE program for less than ten years.

Triangulation is a validity procedure where researchers search for convergence across multiple different sources of information to form themes in a study (Creswell & Miller, 2000). Zoom interviews, SBAE teacher shared experiences, and supplemental material documents aligned with the curriculum were used for triangulation. Supplemental materials were reviewed by the researcher to determine if study participants used differentiation methods in their curriculum materials, SBAE facilities, or activities, and how those differentiation methods were successful for diverse populations.

Supplemental materials were requested from study participants to triangulate data collection and provide evidence of differentiation in the total SBAE program. Three teachers provided scaffolded worksheets, including guided notes and interactive worksheets. Three teachers provided PowerPoint presentations; presentations had evidence of scaffolding through preset formatting guides and instructional pages as well as visuals to compliment written descriptions. One teacher provided one formal assessment. Four teachers provided five activity guides; activity guides included cut and paste activities or inquiry-based partner assignments. One teacher provided two modified SAE plans for students with autism. Two teachers provided formal lesson plans covering one unit of instruction; lesson plans had evidence of resources used, differentiation techniques, and curriculum guidance. Two teachers provided an agricultural workbook created for grades kindergarten through fifth. 13 assignments provided by the participants were copyrighted materials and sourced from TeachersPayTeachers or One Less

Thing. Of the 24 supplemental materials provided to the researcher, 11 were created by the SBAE teacher who provided it.

Supplemental materials provided by study participants were analyzed for evidence of differentiation in the secondary SBAE program specific to each teacher. Supplemental materials were grouped by type. Language identifying differentiation was highlighted by the researcher and compared against similar materials. Differentiated evidence from supplemental materials was then compared to the original interview transcript; overlap of differentiated language in the interview and supplemental materials was noted by the researcher and provided context for each teachers' participation in the study.

The limitations of this study were (1) findings may not be generalized beyond the current sample, and (2) the researcher only has access to information disclosed by teachers during the interview and supplemental materials provided post-interview.

Reflexivity Statement

The researcher acknowledges their personal interest in engaging diverse learners in secondary SBAE programs, specifically how diverse learners are incorporated in the three-component model (National FFA Organization, n.d.). In five years of teaching a middle school SBAE program, the researcher has found a passion for teaching diverse learners. Within the last two years, intentional requests to the registrar and lead autism teacher were made to rotationally include diverse learners in the researcher's SBAE program. Additionally, the researcher's spouse is a current special education resource teacher in the same school building. Intentional requests to the lead special education teacher were made to regularly include students in the general special education setting in the researcher's SBAE program. As a result of those requests, the

researcher desired to identify exemplar secondary SBAE programs in Georgia to model after to ensure diverse learners received a high quality secondary SBAE program experience.

Findings

The original selection of participants intended to only capture middle school SBAE program information regarding differentiation for diverse learners. The study included both middle and high school SBAE teachers (see Table 2.1), resulting in a case study highlighting secondary agriculture education program input. Both male and female SBAE teachers were contacted; only females responded and completed all case study requirements. Four high school SBAE teachers were interviewed as part of the study. Three of the four high school teachers have at least ten years of SBAE teaching experience. Two of the four high school SBAE teachers have earned a doctorate degree; two of the four high school SBAE teachers have earned a specialist degree. Three middle school SBAE teachers were interviewed as part of the study. Both middle school teachers have less than ten years of SBAE teaching experience. One of the two middle school SBAE teachers has earned a specialist degree; one middle school SBAE teacher has earned a masters degree. Approximately 51% of Georgia Agriculture Educators are female according to the Georgia FFA Teacher Directory (Georgia FFA & Agriculture Education, 2025). All findings in this study represent an all-female perspective.

Table 2.1

Characteristics of Study Participants

Pseudonym	School Level	Teachers/Program	Community	Years Teaching	Education Level
Nora	High	3	Rural	21	EdS
Lillian	High	1	Urban	19	PhD
Callie	High	2	Rural	14	PhD
Jennifer	High	2	Rural	8	EdS
Heather	Middle	1	Rural	8	EdS
Naomi	Middle	1	Rural	4	Masters

After analyzing participant responses on best practices for engaging diverse learners in a secondary SBAE program through differentiated instructional techniques, three themes were constructed from the data, (1) Redirection is a Correction, (2) Teacher Limitations, and (3) Representation Matters, along with associated codes. See Table 2.2.

Table 2.2

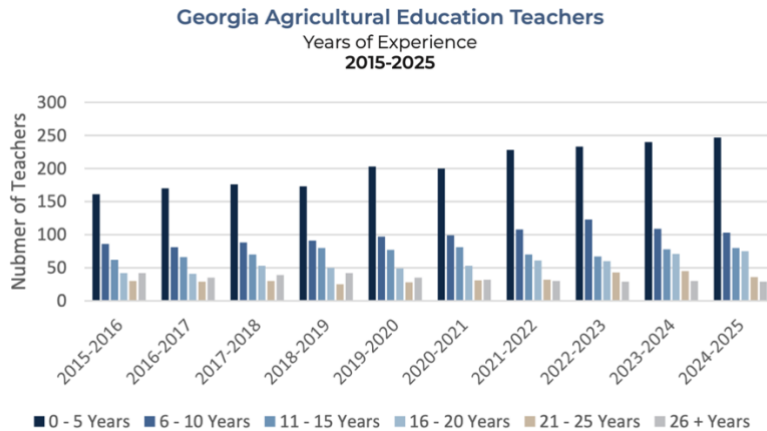
Summary of Themes and Codes

Theme	Code	Description
Redirection is a Correction	Troubleshooting	There is no one-size-fits-all modification. Differentiation is trial and error.
	Finding a Routine	Teachers want their classroom to be structured but the SBAE schedule is unpredictable.
Teacher Limitations	Training Gaps	Most teachers reported limited training for working with diverse populations.
	Program of Work	GA SBAE teachers must maintain their Program of Work standards to receive full extended day/extended year funds.
Representation Matters	In it to Win it	Teachers shared limitations of regularly including diverse learners in competitive events.
	Everybody has a Place	FFA is for everyone – teachers share how they included diverse learners.

Study participants’ SBAE teaching experience aligns with the state averages; 57% of study participants have taught SBAE in Georgia less than ten years. Figure 2.2 outlines the 2024-2025 Georgia Agricultural Education Annual Report (Georgia Agricultural Education, n.d.) program statistics specific to teaching experience for the years 2015 to 2025.

Figure 2.2

Georgia Agricultural Education Teachers’ Years of Experience from 2015 to 2025



Note. Georgia AGED Teacher Years of Experience according to the Georgia Agricultural Education 2024/2025 Annual Report (Georgia Agricultural Education, n.d.)

Case study participants were asked to share their highest degree level earned; participants primarily held higher academic degrees, specifically specialist and doctorate degrees. In Georgia, SBAE teachers receive extended day and extended year funding in addition to their base salary. Base salaries for SBAE teachers increase yearly based on number of years teaching agriculture (Georgia Department of Audits and Accounts, 2022). Education level determines a teacher’s base salary (Georgia Department of Education, n.d.). SBAE teacher salaries in Georgia have the potential to substantially benefit from higher educational degrees plus years of teaching (Georgia Department of Audits and Accounts, 2022).

Theme 1: Redirection is a Correction

The first theme constructed was *Redirection is a Correction*. Included under this theme were two codes: *Troubleshooting* and *Finding a Routine*. The first code was *Troubleshooting* which emphasized that there are no one-size-fits-all modifications for implementing the three-component model in the SBAE classroom, and differentiation is trial and error. Study participants shared varying opinions on the difficulty in wholeheartedly including diverse learners in the total program model, whereas others shared their quick success. Differentiation

cannot be mass produced due to the individualized nature of learning. Jennifer outlined the overarching feeling of the participants through her statement, “It’s more of just the effort of me touching base with them.” Whether you are great at adapting curriculum to support diverse learners or you are just starting out, meeting a student where they are at and being observant of their struggles helps to significantly close that gap. Lillian summed up her attempt at differentiation as “a lot of my techniques are trial by fire.”

Lillian shared a troubleshooting approach in her program where she regularly checks in with her students, saying, “I tell my kids – this is what we’re learning and why we’re learning it and this is how it all works. You didn’t get that? Okay, then let’s try it this way.” Throughout the lesson, she reevaluates student progress: “That still doesn’t make sense? Let’s do it this way. I use what I call ‘voice and choice’ in class. Using voice and choice, they’re going to show me their voice, and they can choose how they teach the topic back to me.” Allowing students the opportunity to reteach information to another student or back to the instructor encourages a deeper understanding of the material and offers continuous formative assessment. Lillian states, “I make my kids teach it to each other and then teach it back to me, because if you can explain it then you understand it. They have to voice the topic to either me or their student group – their choice.”

When working with inclusion students, differentiation can take on many forms. One method of differentiation troubleshooting is replacing an unwanted stim with a desired action. A stim is defined as “a behavior that is marked by a repetitive action or movement of the body, such as repeatedly tapping on objects or the ears, snapping the fingers, blinking the eyes, rocking from side to side, or grunting, and is typically associated with autism” (Merriam-Webster, n.d.). Callie talked about an experience she and her students shared in supporting a student with

autism. Instead of causing a distraction, Callie set the expectation and trained her students to respond constructively when a student needed support and she wasn't available, sharing....

I have a student who is autistic and loves to pick gum underneath the desktop and roll it in his fingers. When I notice him doing it, I redirect him, slide him a container of slime, and remind him to go and wash his hands and then play with the slime. I had a girl in that class that saw him picking at the gum again; she went and grabbed the slime, redirected him to wash his hands, and play with the slime.

The second code in the *Redirection is a Correction* theme was *Finding a Routine*. While individual school systems dictate the overall bell schedule for class changes and lunch/break times, the educator is allowed the freedom to address classroom routine on an individual basis. Regardless of ability level, individuals of all ages can thrive in established and clear routines (U.S. Department of Health and Human Services, n.d.). Most teachers shared a willingness to have a structured classroom space but understand that the unpredictable nature of agricultural education does not always allow that. Naomi's school implemented routine school wide where "her students stay together all day and rotate together. As a smaller school system, students are grouped by homeroom classes and share the exact same schedule for the entire day, including elective classes like SBAE until they enter ninth grade. Naomi shared that her classroom is "super routine oriented," and students know that "the exact same routine will happen every single day." Naomi understands that her students thrive off of routine, as well as herself. She stated that "if I'm not super structured, I'll lose my place that we're at and what we're doing."

Heather's experience included a simple daily classroom routine that involved a warmup, housekeeping tasks, and one major outlet of instruction. To maintain her classroom structure, she follows a predictable schedule including, "a warmup type deal on the board with a different

theme every day,” and the remaining class time is structured into larger instructional segments. One class period may be “notes or info gathering for a couple of days, or we’ll do activities for a couple of days, ending everything with some type of assessment the final day.”

Theme 2: Teacher Limitations

The second theme to be constructed was *Teacher Limitations*. The first code under the *Teacher Limitations* theme was *Training Gaps*. All certified teachers in Georgia who have completed a teacher preparation course through a Professional Standards Commission (PSC) approved institution must complete various pedagogical and content specific courses before being awarded their teaching certificate. Some education programs offer courses in special education or child psychology as an elective, but not as a mandatory course. Several participants noted the deficiency in Georgia SBAE with a lack of specific training and/or resources for teaching diverse learners. Callie shared that at her previous school, the district provided several support classes on teaching methods for diverse learners. She also stated that she is not sure she has ever seen anything SBAE that’s been offered for diverse learners in relation to professional development. For Lillian, she believes “doing well with our diverse learners is more about your attitude than anything. There is no cookie cutter method. If you invest in them, they are going to meet you where you are.”

Jennifer shared a self-motivated approach in addressing differentiation issues. When a student lacks motivation or isn’t completing work, she mentioned “reaching out to the [Special Education] team to say, ‘hey, I’ve tried these accommodations or modifications and they aren’t working for me,’ or talk to some of the other teachers and ask, ‘is it me or is it an every teacher situation?’”

The second code included under the theme *Teacher Limitations* was *Program of Work*. Georgia SBAE teachers must satisfactorily complete a Program of Work (POW) each academic year. POW for middle school programs includes 47 standards while the high school program's POW includes 48. POW standards address SBAE program technology, budget, facilities, FFA activities at and above the chapter level, competition requirements, and classroom instructional requirements. Nora shared how the SBAE schedule can be difficult to manage when trying to differentiate effectively in the classroom, saying, "figuring out, okay, how do I have enrichment activities when I'm always away here or away there and I've got everybody in between?"

In the last year, Georgia FFA has reinforced a policy that has the potential to negatively impact the inclusion of diverse learners in competitive FFA and SAE events. According to a Georgia Regional FFA Director, "for a CDE or LDE to count toward your five required POW events, individuals/teams must complete all aspects of the event, 4-person teams must have at least 3 members, and individuals/teams must score 30% of the top score for that event for that day" (C. Corzine, personal communication, October 17, 2025).

Theme 3: Representation Matters

The third theme to be constructed was *Representation Matters*. Two codes were included under this theme: *In it to Win it* and *Everybody has a Place*. The code *In it to Win It* highlighted the process of including diverse learners in CDEs and LDEs. All participants reported that they did not use IEP or 504 documents to plan competition practices, although the majority of teachers intentionally modify study material to best engage their students. Callie mentioned her meats evaluation team as an example; while she doesn't modify mock competition trials or request accommodations from the CDE superintendent, she does address study method modifications during competition practices. She specifically shared how her students often thrive

with visuals or flash cards, but she “had a kid a couple of years ago that flash cards weren’t working so we literally went to the grocery store and put our hands on what we needed to see for it to click.”

Callie’s belief is that supplemental study techniques that help the individual student during practices should more than adequately prepare a student to compete with the same circumstances a student not receiving accommodations would, because the information is built into them. Both Lillian and Callie agreed that culture is everything in their classrooms and their expectations for acceptance and empathy are high. Lillian shared the accepting culture she and her students have built, stating “As they get older in my program, they start to recognize disabilities and can interact accordingly.” One concern Lillian provided was for the stigma surrounding students with different abilities; “What hurts my feelings is that we can’t talk about it because what wonderful ambassadors they could be for their own condition. Let students be aware that not everyone learns the same way and that we have students facing medical challenges and different things.”

Empowering both general education students and students who receive special education services to practice empathy with one another allows everyone to have an equal opportunity to learn. Nora shared a similar opinion to the majority, in that “If you come in my classroom with work ethic, I don’t care how smart you are because you’re going to figure it out. That’s the big one.” Nora shared multiple times in her interview that all students are capable of achieving standard-level work. Her concern for inclusion highlighted the idea of learned helplessness, stating “I feel like sometimes, we’ve allowed or didn’t know how to help a student that needed extra help, so they’ve got learned helplessness. Trying to help them advocate for themselves for when they need extra help, or I need this.”

Conclusions and Recommendations

Conclusions

This study shed light on best practices for engaging diverse learners in a secondary school-based agricultural education program in Georgia through seven exemplars, specifically through a focus on the three-component model. Fully engaging every student and meeting all individual needs present in a classroom is an unrealistic idea. This study sought to identify tangible ways for SBAE teachers to implement successful and intentional differentiation into their SBAE program to immediately impact a larger audience without creating more work on the teacher.

The three-component model has no time stamp for introduction in SBAE history (Croom, 2008). The model includes three semi-overlapping circles: FFA, SAE, and Classroom Instruction. The Smith-Hughes Act of 1917 and the Vocational Education Act of 1947 cemented agricultural education's place in secondary education. With the progression of education, intentional efforts for inclusion of all students, regardless of ability, have been made. As a result of this progression, legislation was written to serve protected communities. IDEA, the Individuals with Disabilities Act, was passed to ensure that all students regardless of ability had the right to a free and appropriate public education in the least restrictive environment (US Department of Education, 2025). Despite concerns of class size and training limitations, most study participants shared their willingness to include diverse learners to the best of their ability. As interviews were conducted and the data reviewed, the researcher concluded that SBAE teachers are stretched thin and typically unable to differentiate their total program. There is a concern for the practicality of differentiation in the SBAE program in relation to the agricultural education schedule. AGED teachers often miss instructional days for professional development

opportunities, livestock shows, and competitive events. There is concern for whether or not SBAE teachers can provide successful differentiation and student support in their absence. SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Miller et al., 2025; Stair, 2009; Ramage, 2021). Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010)

Differentiation is an acquired skill. SBAE curriculum is taught through hands-on application and provides positive outcomes for diverse learners (Harvey, 2001; McLeskey & Weller, 2000); as a result, almost one-fifth of SBAE students in the United States were identified as a diver learner (Easterly & Myers, 2011). All participants in the study shared their understanding of the importance of differentiation and inclusion, however teachers with less than ten years of experience could not provide strong examples of differentiation in their program. This generalized notion was also found in the Georgia FFA blanket statement of accommodation for CDEs and LDEs (Georgia Agricultural Education, 2025).

Professional development pertaining to diverse learners in SBAE should be included in teacher preparation programs as well as biannual meetings of the GVATA. A North Carolina study reported a positive relationship between hours of professional development focused on diverse learners and a positive perception of their involvement in the NFFA (Johnson et al., 2012). Roberts et al.'s (2020) study found Louisiana SBAE teachers at various stages of teaching experience detailed a need for professional development pertaining to diverse learners. While most teacher preparation programs require some coursework pertaining to diverse learners,

SBAE teachers still struggled with self-efficacy when accommodating for their unique learning needs; additionally, educational trends suggest that the diverse learner population is increasing (Aschenbrener et al., 2010; Ramage et al., 2021).

All case study participants identified as female. Current research suggests professional development needs differ based on educational and demographic differences (Ramage et al., 2022; Roberts et al., 2020). In Foster et al.'s (2020), 74% of license-eligible completers were female. Professional development has the potential to address deficiencies in SBAE inclusion (Birman et al., 2000; Miller et al., 2025), however, professional development opportunities are most effective when designed for specific teachers' skill development (LeJeune & Roberts, 2020). A lack of data is noted for professional development needs of female SBAE teachers; previous studies have focused on quantitative methods and overwhelmingly reported a male perspective (LeJeune & Roberts, 2020; Ramage et al., 2022).

AGED teacher preparation programs do not fully prepare SBAE teachers to handle diverse learners. Most teacher preparation programs offer less than three exceptional student courses highlighting individuals with special needs and best differentiation practices. Both traditional preparation teachers and alternatively certified teachers lack training in working with diverse learners. SBAE program explanations or examples are not typically offered in Georgia due to the competitive nature of FFA and SAE events. Neither state SBAE staff nor Georgia FFA Association offer SBAE specific program trainings for teachers related to competitive events. Georgia's Program of Work standards for AGED do not contain inclusive language for involving diverse learners in the SBAE program.

Traditional project-based learning through the three-component model (SAE) should be reviewed for curriculum relevance in today's SBAE classroom. With an increase in urban

communities and potential shifts in educational intent with the use of projects, SBAE teachers must question whether students should complete an SAE to apply concepts learned in the SBAE classroom or use the SAE project as a means to explore and discover new agricultural concepts; as educational reform and philosophical shifts occur, the educational intent of project-based learning must be questioned (Smith & Rayfield, 2016).

All participants noted the importance of classroom routines and accepted practices as well as the idea that inclusion of diverse learners dictates constant troubleshooting to ensure each student can engage with the curriculum. SBAE teachers seem to be aware of the perceived higher benefit of SBAE participation with special needs populations (Johnson et al., 2012). SBAE teachers with ten or more years of SBAE teaching experience seemed to differentiate more effectively and more often when compared to teachers with less than ten years of SBAE teaching experience.

As a part of middle school Career and Technical Education (CTE), SBAE provides opportunities for skill development and career exploration (Eck & Davis, 2024; Ireland, 2022). Georgia's program of work for secondary SBAE programs covers over 45 standards. Competitions are covered in standard 32 and require the program have students compete in a minimum of five CDEs, with at least two of the five being an LDE, and at least two being a team event. For the 2025/2026 school year, score reinforcement has occurred; students competing must pass the 30% threshold for the teacher to receive credit for competing (C. Corzine, personal communication, October 17, 2025). Of the over 45 standards, specific language for diverse learners or students with special needs is not included.

Vygotsky's Social Constructivism Theory details the belief that learning occurs through social interactions (1962). A major concern for this study was the limitation placed on diverse

learners in the SBAE program if appropriate differentiation was not occurring. Throughout the interview process, study participants reiterated their desire to teach in inclusive spaces and fully incorporate students with disabilities, but several external concerns were raised. If social interactions are not occurring, the assumption is that learning is not occurring (Vygotsky, 1962). Differentiation cannot be mass produced. Individualized Education Plans (IEP) and 504s outline the specific learning accommodations needed for a student to be successful in their classroom placement. As limitations of ability are not the same, neither can educational materials be the same. Both curriculum and program differentiation involves more effort on the SBAE teacher in prior planning as well as during curriculum instruction and skill practices for competitive events.

Today's SBAE programs are reflecting a rural/urban shift occurring in the United States. The National FFA Organization reported an increase in non-rural membership representation, from 27% in 2015 to 39% in 2022; additionally, a 5.5% increase in racial and ethnic diversity occurred (National FFA Foundation, 2017, 2015, 2022; Martin et al., 2024). SBAE programs must be intentional in fostering connections for non-rural individuals to the importance of agriculture while meeting the needs of a broader population.

Study participants did not share specific reasons for pursuing higher education other than to complete certification requirements for an AGED teaching certificate. Higher educational degrees were not necessarily sought after for the benefit of the SBAE program.

Recommendations

The following recommendations are offered for future research. Investigate the success of SBAE curriculum resources prepared by the Georgia Department of Education compared to SBAE teacher-created curriculum resources, with specific attention to resources benefitting diverse learners. The current study focused on best practices for engaging diverse learners in the

secondary SBAE program through the three-component model from exemplar SBAE teachers' perspective. Future research could showcase the benefits of certain differentiation tools and/or methods used in secondary SBAE.

A mentor program could be created to match teachers with at least ten years of SBAE teaching experience with a teacher with less than ten years of SBAE teaching experience. The mentorship would ideally offer support in all aspects of the three-component model and serve as a training effort. A successful mentorship should include a mentor teacher with proven success in differentiating the SBAE program and a desire to work with diverse learners as well as a mentee teacher with the desire to work with diverse learners. This recommendation is solely based on the study participants desire to actively involve diverse learners in the 3-component model.

GVATA has placed a renewed importance on professional development for SBAE teachers in specialized areas. GVATA should host professional development on what tools SBAE teachers can have pre-made in your teacher toolbox to make teaching diverse learners easier. Including training on SBAE differentiation techniques through the standard requirement of professional development could result in a positive impact on Georgia's SBAE students (Miller et al., 2025). SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Miller et al. 2025; Stair, 2009; Ramage, 2021). Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010). Current research suggests that many SBAE perceive themselves as being unprepared for the inclusion of diverse

learners in the three-component model in response to the increase population of diverse learners in the SBAE program (Stair et al., 2010).

Further research should be conducted on the impact of professional development for SBAE pre-service teachers specific to diverse learners. Little is known about whether professional development training on diverse learners could catalyze pre-service teachers' growth for overcoming challenges associated with diverse learners in the SBAE program (Miller et al., 2025; Ramage et al., 2021).

Since differentiation cannot be mass produced, the researcher recommends creating a state-wide resource sharing space specifically for SBAE curriculum pertaining to diverse learners. Resources can be shared through the Georgia FFA Association website or through a community based social media page.

Further research should be conducted on the SBAE teacher's professional schedule in relation to student success. Diverse learners cannot be active participants in the total SBAE program and gain skills in the absence of the SBAE teacher.

Future research should be done to consider the SBAE program impact of SBAE teachers earning higher education degrees in Georgia. Are SBAE teachers with higher degrees more effective in operating the SBAE program? Is earning a higher education degrees a personal or professional motive?

Chapter 3: Adapting Project-Based Learning: How Hands-On Learning Benefits Students with Disabilities in a School Based Agricultural Education Classroom

Abstract

Project-Based Learning (PBL) historically connected modern agricultural concepts to home farming operations. Stimson's Home Project (1919) and Jackman's Nature Study (1894) laid the groundwork for modern project-based learning methods in SBAE. The purpose of this study was to identify actively operating PBL strategies used in Georgia secondary SBAE classrooms specifically for diverse learners. Case Study Methodology (Yin, 2018) was used to capture the complexity of differentiating PBL for diverse learners in secondary SBAE. This study was framed by Social Constructivism Theory (Vygotsky, 1962); PBL aligns with SCT's scaffolding and experiential learning. The researcher developed an instrument with 36 semi-structured interview questions exploring the best practices for differentiating PBL in secondary Georgia SBAE programs. State SBAE identified six exemplars who differentiated their total SBAE program to specifically benefit diverse learners. Five themes were constructed from the data: Accessibility of SBAE, SAE for All or Nothing, Skill Development over Content Mastery, External Support is Essential, and Behavior Management. Guardian support was noted as a significant scaffolding support to promote student success in the classroom. With external pressure for program achievement, SBAE teachers may not recruit diverse learners for competitive events in NFFA, therefore removing a pivotal opportunity for social and career skill development.

Key Words

Project-Based Learning, School Based Agricultural Education, Supervised Agricultural Experience

Introduction

Early agricultural education (AGED) was facilitated through project-based methods (McKibben et al., 2024; McKibben & Murphy, 2021) and solidified the need for formal legislation outlining project-based learning (PBL) and school based agricultural education (SBAE) (National Vocational Education Act, 1917; Smith & Rayfield, 2016). PBL was first penned in Jackman's Nature Study (1894) and more formally recognized in Stimson's Home Project (1919). Jackson proposed the avenues through which the elements of a concept gained must occur through the senses, therefore any scientific discovery is made through individual observations with consideration to interpretation (Jackson, 1919). Stimson's text, Vocational Agricultural Education by Home Projects (1919), highlighted the benefit of vocational education as early as the elementary level with shop work, gardening, and home economics activities. SBAE programs on the secondary level can benefit significantly from an earlier introduction of agricultural concepts (The Movement for School-Based Agricultural Education, n.d.).

The project method of teaching has existed since the beginning of structured education, with the primary role being to present problems through real life situations and allow individuals to develop techniques and solutions through practice (Stevenson, 1921). John Dewey, philosopher and psychologist, penned "where there is reflection, there is suspense; the object of thinking is to help reach a conclusion" (Dewey, 1910). Rather than learning through memorization, an individual must reflect on an experience and understand through action. Stafford et al. (2003) found that immediate reflection about a service-learning project resulted in greater impacts.

Knowledge is a byproduct of the project method (Roberts & Harlin, 2007). As the FFA motto states, SBAE students are tasked with "learning to do, and doing to learn" (National FFA

Organization, n.d.). PBL therefore allows educators and students to guide themselves through the curriculum with an end goal in mind: to practice modern agricultural skills in a controlled environment in a self-sufficient manner (Smith & Rayfield, 2016). At its core, Career, Technical, and Agricultural Education (CTAE) and SBAE exist to provide opportunities for skill development and career exploration (Eck & Davis, 2024; Ireland, 2022).

Senate Bill 330 outlined the need for SBAE on the elementary level in Georgia (Georgia Agricultural Education, n.d.). SB 330 was signed by Governor Deal in 2018; the pilot program involved 25 schools and ended in 2022. As of 2022, elementary SBAE is no longer considered a pilot program and is offered as a permanent choice in Georgia's kindergarten through fifth grade programs (Georgia Agricultural Education, n.d.). Elementary SBAE is typically offered as a rotational class for grades K-5, covering the following standards: employability skills, agricultural systems, foundations of agriculture, leadership and career readiness, and natural resource systems (Georgia Agricultural Education, n.d.).

The Smith Hughes Act of 1917 established formal agricultural education in secondary programs (National FFA Organization, n.d.). The Smith-Hughes Act met a need for rural communities by making funds available for teachers, supervisors, and directors of agricultural subjects (National FFA Organization, n.d.). The passing of this legislation slowed the rural student dropout rate (ACTE, 1976).

SAE is one of three integral parts of the three-component model in SBAE (Croom, 2008). SAE mimics Stimson's home project in a modern format (Smith & Rayfield, 2016). Georgia's SBAE Program of Work standard eighteen states that the teacher will ensure that a minimum of 60 percent of students have in place an approved Supervised Agricultural Experience Program (Georgia Agricultural Education, n.d.).

SAE projects are outlined in SBAE curriculum (GDOE, 2019). In the Agriculture, Food, and Natural Resources (AFNR) Basic Agricultural Science standards outlined by the Georgia Department of Education (GDOE), students must explore, develop, and implement the Supervised Agricultural Experience (SAE) program by researching careers in agriculture and agribusiness (GDOE, 2013).

Parental involvement in the SBAE program can be a successful if utilized intentionally (Durisic & Bunijevac, 2017). A study conducted on parents' value of their children learning about agriculture in school indicated that 72% of parents believe it is extremely important that their children learn about agriculture in school (Miller et al., 2025). With this statistic in mind, intentional partnership with parents and guardians can greatly impact the future of SBAE (Lee & Udry, 2024). Past studies in child development and education research explicitly identify parental support as a key factor in the academic success of the student in what and how the child learns (Miller et al., 2025). The relationship between parent, student, and teacher can also impact student's success in the classroom (Schock & Jeon, 2023). If a parent or guardian has a negative connotation of the subject or instructor, a negative impact on the student's engagement or success could be noted (Schock & Jeon, 2023).

Inclusion can be defined as “the commitment to providing the supports and adaptations that children need so that they can be successful, and the recognition that success does not look the same for all students” (Parent to Parent of Georgia, 2025). Successful inclusion must maintain the following: administrative support of the SBAE program and inclusion practices, support from special education personnel, an accepting and positive classroom culture, an effective teacher, functional student support systems, and educator-specific skills for working with diverse learners (Mastropieri & Scruggs, 2001; Ramage, 2021).

Most secondary agriculture education classrooms experience a varying population of individuals with learning difficulties (Hoerst & Whittington, 2009). Educational trends are expecting an increase in diverse learners. This study identified a diverse learner as an individual requiring IEP or 504 accommodations. Current research suggests that many teachers do not feel prepared to address the needs of diverse learners (Stair et al., 2010). A lack of preparedness on the educator's part can lead to an increase in behavioral issues occurring in the SBAE program (Toombs et al., 2025). Behavior management plans are not a one size fits every classroom strategy. A behavior management plan is a proactive strategy developed by the teacher to create an optimal learning environment (McKillop, 2022). Recchia & Puig's (2011) study explored behavioral approaches used by student teachers when working with diverse learners; findings included a need for gaining respect from students, inclusive conversations on behavioral needs, and feelings of discomfort in implementing harsh behavioral interventions (Ramage, 2021).

Teacher's perceptions of working with diverse learners through SAE can be impacted by numerous variables: teacher's age, years of teaching experience, interaction with diverse learners outside the SBAE classroom, and the amount of specialized training in working with diverse learners (Johnson et al., 2012; Pense, 2007; Smith et al., 2024). PBL, in the context of SAE, is expected for all students enrolled in the SBAE program (Georgia Agricultural Education, n.d.). Elementary and middle school AGED are introductory courses in SBAE and allow students to engage in a range of agricultural topics. In an introductory course, middle school students should use SAE to further prepare students for the agricultural pathways offered on the high school SBAE level (Eck & Davis, 2024; Hainline & Smalley, 2021).

Current research outlines that SBAE teachers aren't confident in their ability to serve diverse learners in SAE. This study sought to identify SAE project opportunities unique to the strengths of individual diverse learners as well as the benefit of PBL for skill development.

Theoretical Framework

This study was framed by social constructivism theory (SCT; Vygotsky, 1962). Individuals are constantly learning what is acceptable or rejected within their environment through trial-and-error interactions (Vygotsky, 1962). Vygotsky believed individuals internalized culturally accepted signs and in turn transformed their behaviors, making connections between culture and behavior linked to individual development (Vygotsky, 1962). Individuals are shaped by their culture and environment. In the SBAE setting, individuals can immediately interact socially, emotionally, and physically both with other individuals and agricultural concepts to strengthen individual development. This study highlights how hands-on learning benefits diverse learners in a SBAE classroom through PBL.

Project-Based Learning is used as the primary assessment method as it aligns with the historic model of agricultural education, referenced by Stimson (1919) and Jackman (1894). Individuals immersed in an agricultural concept with only their peers and surroundings for support, allows the student to be intentionally shaped through an immediate experience (Knobloch & Smith, 2024).

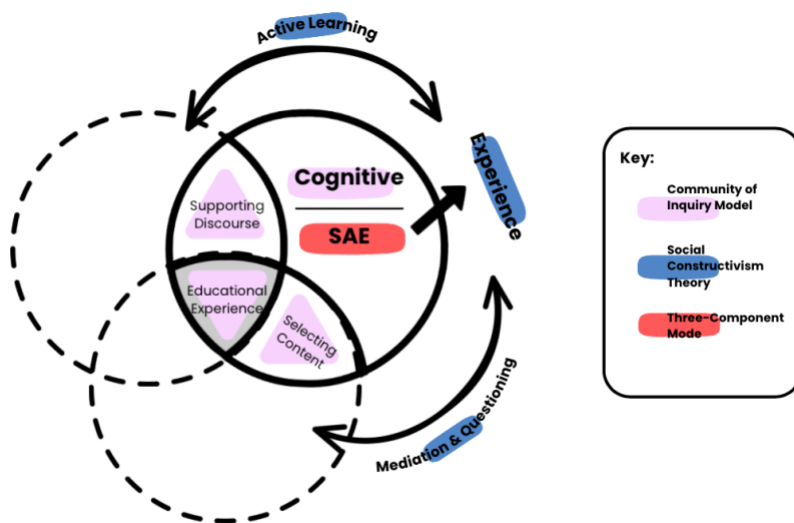
The Community of Inquiry (CoI) model (Garrison et al., 2001) mimics the intracurricular nature of the three-component model (National FFA Organization, n.d.). SCT (1978) states that learning coincides with interactions with individuals through shared experiences. Both SAE (National FFA Organization, n.d.) and cognitive process (Garrison et al., 2001) culminate in an experiential process of learning. Throughout PBL, students engage in active learning, mediation,

and questioning as SCT (Vygotsky, 1968) outlines. Within the PBL space of the CoI (2001) model and the three-component model (National FFA Organization, n.d.), SBAE teachers must select curriculum content that is accessible for all learners in the total program as well as support discourse to encourage content and/or skill understanding. SBAE facilitates the instruction of transferrable skills that require students to both physically and mentally engage with a topic, therefore social connections and environmental awareness become nonnegotiable for all parties.

Figure 3.1 depicts how Vygotsky’s (1968) SCT, the three-component model (National FFA Organization, n.d.), and the CoI model (Garrison et al., 2001) align PBL through SAE and cognitive process.

Figure 3.1

Interpretation of How Project-Based Learning Overlaps with SCT, CoI, and Three-Component Model



Note. Interpretation of The Community of Inquiry Model (Garrison et al., 2001), the Three-Component Model of Agricultural Education (National FFA Organization, n.d.), & Vygotsky’s Social Constructivism Theory (1968).

Purpose

The purpose of this study was to identify PBL strategies used in secondary Georgia SBAE classrooms for diverse learners. The objectives that guided this study included:

1. Determine the accessibility and accommodation of CTAE facilities for diverse learners in secondary Georgia SBAE programs.
2. Identify PBL activities that engage diverse learners in secondary Georgia SBAE programs.
3. Determine supports provided to secondary SBAE teachers for diverse learners in Georgia.
4. Identify classroom management strategies used by secondary Georgia SBAE teachers to support diverse learners.

Methods

This qualitative research study sought to understand best practices for engaging and differentiating the secondary Georgia SBAE program for diverse learners through case study methodology (Yin, 2018). This case study was approached as an exploratory study. We sought to engage with teachers identified as best in their field in teaching diverse learners, for the purpose of identifying best practices for modifying SBAE instruction and the classroom environment. A descriptive analysis of individual teacher interviews allowed the case study to ascertain relevant themes that bring to light the art of teaching diverse learners.

Qualitative research is preferred when addressing building a case that investigates experiences or accounts of individuals (Creswell & Creswell, 2014). A case was built through interviews as the researcher sought to identify best practices for engaging diverse learners in secondary SBAE programs in Georgia as well as any curriculum or curriculum adaptations

deemed successful by study participants. This part of the study aimed to specifically understand how students with learning difficulties, physical/mental disabilities, etc., are successfully included in the three-component model through exemplar teachers' point of view. Participants in the study ranged from four years of experience to twenty-one years of experience, providing an early career teacher's perspective as well as a veteran teacher's perspective on the benefits of project-based learning in the SBAE curriculum.

The case bounds involved interviewing certified secondary SBAE teachers in Georgia with the intent to identify best practices for engaging diverse learners in the 3-component model. Specifically, how diverse learners engage with AGED curriculum standards, participate in leadership and career development events, and complete an authentic SAE. The individuals identified for participation in the study were provided by state AGED staff; the request made to state AGED staff required identified teachers to be perceived as skilled at differentiating FFA, SAE, and classroom instruction specific to diverse learners. Participants in the study were asked to complete an interview with the researcher and provide verbal examples of total program differentiation as well as tangible examples of differentiated SAE plans, curriculum assignments/rubrics/etc, and competition preparation do's and don'ts for diverse learners.

The case was structured as holistic-multi case. Yin states that case study is an empirical inquiry that investigates the case or cases and addresses the "how" or "why" questions concerning the identified area of interest (Yazan, 2015; Yin, 2002). Each of the six identified participants provided their context of how diverse learner can be and should be included in the 3-component model. Both an early career teacher and veteran teacher input was considered, as well as consideration for supplemental materials provided by participants highlighting differentiation. This study focused on the interviews conducted to build the case of how diverse learners are

included in the secondary SBAE program in Georgia (Yin, 2002). Supplemental materials like lesson plans, project examples, and competition preparation materials were used to triangulate results and ensure validity. Yin suggests the use of six evidentiary sources in case study research: documentation, archival records, interviews, direct observations, participant observation and physical artifacts (2002); this study specifically utilized documentation, archived interview records, interviews, participant review of transcripts, and physical artifacts in the form of curriculum materials and/or CDE/LDE preparatory materials.

Instrumentation

Interviews were conducted with a researcher developed instrument with 36 open-ended questions. The researcher used semi-structured interview protocol to develop the instrument. This is a part of a larger study conducted to identify successful instructional strategies for students with learning difficulties in secondary agricultural education. Questions involved program and instructor characteristics, details regarding specialized curriculum and facilities, differentiated SAE and FFA opportunities, participants' self-assessment of differentiation ability, and professional development opportunities in differentiation specific to SBAE. The instrument was developed using Yin's Case Study Methodology Research Methods (2018) as a guide for identifying best practices for engaging diverse learners in the secondary Georgia SBAE program through exemplar perspectives.

Data Collection

Exemplar SBAE teachers were identified by Georgia SBAE state staff. The researcher asked state staff to identify middle school SBAE teachers who differentiated the SBAE program well for diverse learners. Limited middle school responses were received. The researcher asked state staff to additionally identify high school SBAE teachers who differentiated the SBAE

program well for diverse learners. 13 total teachers were identified and represented secondary SBAE programs. 11 out of 13 teachers contacted responded as willing to participate in the case study; five of the 11 SBAE teachers agreed to participate in the study but did not complete an interview or provide supplemental materials, two of the 13 SBAE teachers did not respond when contacted. Participants in the study are active SBAE teachers in a secondary school.

Zoom interviews were conducted with six exemplar SBAE teachers. Case study participants were contacted at least one week prior to their scheduled interview; all participant interviews were completed within one month's time from the initial email invitation. For each interview, only the case study researcher and one SBAE teacher were present. All interviews were conducted in August of 2025 for a total run time of 6.78 hours, or 407 minutes.

Supplemental materials were requested at the end of each interview for triangulation of results. Supplemental materials provided proof of differentiation through modification in the SBAE program. These materials included: lesson plans, project rubrics, assignment examples. Two participants shared a teacher-created lesson resource. Four participants shared resources created by copyright sources like TeachersPayTeachers and OneLessThing; copyrighted resources included: scaffolded guided notes worksheet with a summative assessment, FFA emblem cut and paste activity, and an agricultural workbook for special needs students designed for grades kindergarten through fifth.

Participants

The researcher initially contacted state Agricultural Education staff to identify potential case study participants who taught middle school level SBAE and could be identified as proficient at differentiating the three-component model for diverse learners. With the limited number of middle school agriculture teachers identified by state staff, high school agriculture

teachers, also identified as exemplars in differentiation by state staff, were contacted to increase case study responses based on state staff recommendations.

Of the 13 teachers identified by state staff, only two were middle school SBAE teachers. The researcher contacted all 13 teachers identified by state staff as exemplar teachers in differentiation. All 13 teachers were classified as secondary level SBAE teachers; secondary SBAE teachers are certified to teach sixth through twelfth grade AGED. 11 teachers responded as willing to participate in the study. Five of the 11 teachers who responded to the initial study invitation did not complete an interview or provide supplemental materials. Two of the 13 SBAE teachers contacted did not respond when contacted about study participation. 11 out of the 13 SBAE exemplar teachers identified as female; the two SBAE teachers that did not respond when contacted about study participation identified as male. Table 3.1 depicts the characteristics of participants involved in the case study.

Table 3.1

Characteristics of Study Participants

Pseudonym	School Level	Teachers/Program	Community	Years Teaching	Education Level
Nora	High	3	Rural	21	EdS
Lillian	High	1	Urban	19	PhD
Callie	High	2	Rural	14	PhD
Jennifer	High	2	Rural	8	EdS
Heather	Middle	1	Rural	8	EdS
Naomi	Middle	1	Rural	4	Masters

Data Analysis

Participants were asked by the researcher to agree, disagree, or edit themes and codes to more precisely reflect what they meant to convey in their interview via member checking.

Memos were recorded by the researcher during participant interviews; participant reactions, potential emerging themes, and relevant thoughts were recorded and uploaded to a secure Box Folder, as approved by IRB. Themes and codes were reviewed by the case study researcher and

study participants on an individual basis to ensure accuracy (Creswell, 2009). The researcher sought to identify best practices for engaging diverse learners in the total SBAE program in secondary schools in Georgia from the view of exemplar SBAE teachers.

Trustworthiness was established through rich, thick descriptions using direct quotes throughout the study to provide a clear understanding of best practices for engaging diverse learners in secondary SBAE programs in Georgia, with specific interest in highlighting how diverse learners are included in the three-component model (Croom, 2008). These rich descriptions allow the reader to determine transferability and applicability of all findings (Guba, 1981). Reliability was established through a continuous review of the themes and codes with reflective memos, as well as review and debriefing with each interviewee and the advising graduate committee member to ensure transcribed interviews were accurate as well as final themes. Each study participant was contacted at least once post-interview to offer insight on provided interview transcriptions with identified codes and themes. Three participants accepted the codes and themes as presented, three participants provided further in-depth descriptions of program details that allowed for the expanding of themes to occur. Each of the three participants who offered further feedback have taught in a Georgia secondary SBAE program for more than ten years. Of the three teachers who accepted the presented codes and themes as is, all have taught in a Georgia secondary SBAE program for less than ten years.

Triangulation is a validity procedure where researchers search for convergence across multiple different sources of information to form themes in a study (Creswell & Miller, 2000). Zoom interviews, SBAE teacher shared experiences, and supplemental material documents aligned with the curriculum were used for triangulation. Supplemental materials were reviewed by the researcher to determine if study participants used differentiation methods in their

curriculum materials, SBAE facilities, or activities, and how those differentiation methods were successful for diverse populations.

Supplemental materials were requested from study participants to triangulate data collection and provide evidence of differentiation in the total SBAE program. Three teachers provided scaffolded worksheets, including guided notes and interactive worksheets. Three teachers provided PowerPoint presentations; presentations had evidence of scaffolding through preset formatting guides and instructional pages as well as visuals to compliment written descriptions. One teacher provided one formal assessment. Four teachers provided five activity guides; activity guides included cut and paste activities or inquiry-based partner assignments. One teacher provided two modified SAE plans for students with autism. Two teachers provided formal lesson plans covering one unit of instruction; lesson plans had evidence of resources used, differentiation techniques, and curriculum guidance. Two teachers provided an agricultural workbook created for grades kindergarten through fifth. 13 assignments provided by the participants were copyrighted materials and sourced from TeachersPayTeachers or One Less Thing. Of the 24 supplemental materials provided to the researcher, 11 were created by the SBAE teacher who provided it.

Supplemental materials provided by study participants were analyzed for evidence of differentiation in the secondary SBAE program specific to each teacher. Supplemental materials were grouped by type. Language identifying differentiation was highlighted by the researcher and compared against similar materials. Differentiated evidence from supplemental materials was then compared to the original interview transcript; overlap of differentiated language in the interview and supplemental materials was noted by the researcher and provided context for each teachers' participation in the study.

The limitations of this study were (1) findings may not be generalized beyond the current sample, and (2) the researcher only has access to information disclosed by teachers during the interview and supplemental materials provided post-interview.

Reflexivity Statement

The researcher acknowledges their personal interest in engaging diverse learners in secondary SBAE programs, specifically how diverse learners are incorporated in the three-component model (National FFA Organization, n.d.). In five years of teaching a middle school SBAE program, the researcher has found a passion for teaching diverse learners. Within the last two years, intentional requests to the registrar and lead autism teacher were made to rotationally include diverse learners in the researcher's SBAE program. Additionally, the researcher's spouse is a current special education resource teacher in the same school building. Intentional requests to the lead special education teacher were made to regularly include students in the general special education setting in the researcher's SBAE program. As a result of those requests, the researcher desired to identify exemplar secondary SBAE programs in Georgia to model after to ensure diverse learners received a high quality secondary SBAE program experience.

Findings

After analyzing case study participant responses for best practices in engaging diverse learners in a secondary SBAE classroom through project-based learning, five themes were constructed from the data, (1) Accessibility of SBAE, (2) SAE for All or Nothing, (3) Skill Development over Content Mastery, (4) External Support is Essential, and (5) Behavior Management, along with associated codes. See Table 3.2.

Table 3.2

Summary of Themes and Codes

Theme	Code	Description
Accessibility of SBAE	Facility Access	Physical accessibility allows all students with varying abilities to participate.
	Content Modifications	Some teachers struggle to provide high quality differentiation for all learners.
	Realistic Expectations	Teachers talked about setting expectations early and maintaining those expectations so that all students are fully included in the standard practice.
SAE for All or Nothing	Makeshift Project	Some teachers struggle to fully incorporate individualized SAE plans and use a class project instead.
	Ability or Availability	Teachers shared unique SAE ideas for students with disabilities and/or limited resources.
Skill Development over Content Mastery	Right to Learn	All students, regardless of ability, have the right to interact with their peers and practice career skills.
	Inclusion or Illusion	Teachers shared how they either met or exceeded the requirement of inclusion.
	Building Bridges	Inclusion is not a one-person task. Teachers shared how they built in support teams.
External Support is Essential	Parental Expectations	Some teachers included parents as a support scaffold to promote standard success.
	Strings Attached	Some teachers shared administration's concern for FFA program success VS classroom success.
Behavior Management	Stress Slows Success	SBAE classrooms are typically a melting pot of behaviors and abilities with limited support.
	Pivot	Replacing unwanted behaviors with desired behaviors.

Theme 1: Accessibility of SBAE

The first theme constructed was *Accessibility of SBAE*. Included under this theme were three codes: *Facility Access*, *Content Modifications*, and *Realistic Expectations*. The first code was *Facility Access* and highlighted the physical accessibility of SBAE program facilities for use by students in project-based learning. The U.S. Department of Justice Civil Rights Division

highlights the ADA compliance checklist for ensuring Title II and Title III regulations are followed for a facility to be physically accessible for a person with disabilities (2010). Although some SBAE programs have been operating for several decades and did not originally include ADA compliant facilities, SBAE teachers have found ways to immerse students with disabilities in SBAE facilities. Nora shared how she included a legally blind student in tractor driving and operations management. In limiting the number of spectators and going hands on beside the student driver, she created an accessible learning environment.

In going beyond the standard, Nora ensured her self-contained students met the standard target, while maintaining their sense of autonomy. She utilizes stools to help with stability issues when teaching tractor driving; “I had to get another stool to make it easier because those [tractor] steps are harder. It’s in the lowest setting so I just walked beside it so that if she got off course, I could adjust the steering wheel.”

When creating accessible facilities in older SBAE programs, SBAE teachers must get creative. Nora wrote a grant through NFFA to secure funds for mobile transportation to their program’s offsite garden. She integrates a golf cart safety driving test into the agricultural safety standard curriculum to ensure this capital is maintained appropriately. She shared that she wrote the grant to NFFA for the golf cart for students with walkers or physical disabilities who were unable to walk about ¼ of a mile to get to the outdoor garden. In contrast, older SBAE programs may have functioning specialized facilities but still have ADA compliance issues. Jennifer’s greenhouse, used to teach horticulture standards, has a concrete walkway and concrete flooring, but does not have an accessible layout for physical disabilities inside the structure.

The second code constructed was *Content Modifications*. Generalized accommodations for students with disabilities are provided in the IEP or 504 paperwork at the start of the term.

Any further modifications to encourage student success or engagement must be made by the SBAE teacher. As previously stated, SBAE can provide an outlet for diverse learners due to its hands-on nature. Heather shares that alternative learners “thrive in the greenhouse; they like doing task related things and a lot of the times outwork the other kids.” Nora agreed, stating her modifications are only in place to make sure all students are able to participate in the curriculum. She says, “for the most part, all our kids take part in everything. I think that goes back to sometimes we have our expectations set too low and give the kid too easy of a task.”

Callie highlighted the importance of following the state standards, but prioritizing picking curriculum that works best for both the type of teacher and students present in that program. Callie shared that she follows the GA standards for her classes, however she does “pick and choose curriculum. I’ve pulled from Cornell curriculum for veterinary science, I’ve used a little bit of One Less Thing curriculum, but I use all of it as a base and then adapt it to what me and my kids need.” Callie summarized her teaching style as a “let’s go online and find a project’ kind of teacher.”

Jennifer’s program mimicked Callie’s in that she allows her standard instruction to be fluid to her and her students based on her observations. The third code highlights *Realistic Expectations* when working with diverse learners. In her floriculture course, Jennifer maintains that all students must complete the required assignment for standard credit, however, builds in modifications based on her observations during the activity. During a flower arrangement construction lab, Jennifer shared “she gives instructions ahead of time” and allows for work to be “kind of independent.” If she notices a student not wanting to make an arrangement or having difficulty with the need to sit still for a long period of time, “I normally get them to help me get flowers out of the cooler, or to reorganize floral supplies, scout for greenery cuttings for

arrangements outside, or add water to vases. Sometimes that helps them, and it also benefits everybody else.

Both Callie and Nora shared their expectations for including diverse learners in shop related skill development. Callie maintained that the root of success for including diverse learners in agricultural mechanics skills, something long noted as problematic (Faulk et al., 2024) was making sure they know what the expectation is. In making triangle peg board games in wood shop, Nora operates her lab based on skill ability and uses rotational grouping to encourage student success while also allowing diverse learners the time and support needed to be successful. Nora uses rotational grouping during construction labs, stating that “If we’re cutting boards, I’m going to work [diverse learners] in towards the end of the line and let the faster people go through, because we do everything in steps.” To encourage student success and that all students are supported, Nora follows her diverse learners at every step, sharing that “It’s a process – I stay with them and allow them to make the physical cut, they drill their holes, they do everything that everybody else does. I just make sure they have someone there to support them.”

Theme 2: SAE for All or Nothing

The second theme to be constructed was *SAE for All or Nothing* and included two codes: *Makeshift Project* and *Ability or Availability*. The first code constructed under *SAE for All or Nothing* was *Makeshift Project*. To include every student in an SBAE program, SAE for All was created to provide access and opportunity to all students in work-based learning opportunities (SAE for All, n.d.). As a play on words, the theme *SAE for All or Nothing* represented the mixed opinions for SAE implementation in study participants’ programs.

Some participants modified their curriculum to only introduce SAE projects to older students in their program. Naomi’s middle school students only complete an SAE project and

record book in the eighth grade. Her reasoning for that involves the inconsistency of younger student's projects; she found that most of her sixth and seventh grade students gravitated towards bird house projects and ignored the intent of an SAE. Heather's students participated in school-based projects that grouped like individuals together, navigating a less strict SAE and allowing the group to submit one project; "I may group them together if my class has a paraprofessional. They'll pick like a school-based project and do that all together. It may be like a campus clean up or fix the flowerbed somewhere – that way they can all do the project together."

Abilities and circumstances can dictate a student's SAE project options. Jennifer uses current school-based opportunities provided in the inclusion classroom to design an operational SAE for her students. Jennifer shared that "the inclusion class at her current school runs a daily coffee shop with their students. We designed a food services and processing SAE. We adapted it so that they got their hours but also doubled up on something they were already working on." For her students with limited resources who want to complete an at home SAE, she suggests taking care of their pets to give them the independence of their own project while still meeting them where they're at. For generalized IEP/504 students, school-based SAEs through the SBAE program can involve landscaping school grounds, or task-oriented projects; Jennifer shared that task-oriented projects including daily routines typically are completed.

The second code to be constructed under the theme *SAE for All or Nothing* was *Ability or Availability*. Several case study participants provided out of the box examples for including diverse learners in agriculturally based SAEs. Heather focused her SAE inclusion as a whole group, sharing that "in the past we've done field trips to an ag-related facility, or an interactive field trip, and all the SPED kids that I would have for the entire year would take one large group trip together." Heather's whole group SAE visits have included a trip to "a Christmas tree farm

where they did different tasks, they've been to another agritourism pumpkin type deal" as well as "a local mostly organic operation." To encourage authentic SAE participation for all students as well as accommodating all abilities, Heather shared that her SBAE just does "one big SAE trip together to help take the stress off their guardians because otherwise they may not get an opportunity to see a project through at home."

Callie's most unique SAE projects for two students with autism involved a technological component. For an animal science focused project, her student created an AI (artificial intelligence) assisted coloring book based on the livestock kept at the school barn. Although she did not feel comfortable physically working with the animals, she still completed an agriculturally focused SAE record book. Her second student was a gamer and enjoyed the game Minecraft. Using the Minecraft system, Callie designed an SAE project that involved modern farming practices; "I have a kid right now who's autistic and their SAE is fully on Minecraft. He's a gamer kid and that's his comfort. He's making a full farm on Minecraft; there's guidelines on it so that he's not just playing a video game." Callie had to understand her student's ability as well as his interests to ensure he would be fully involved in the SAE program. Her creative thinking still held her student accountable to the standard, stating that "He's having to think about actual farming practices in the game – it's just thinking outside the box." Although there are some cases where a traditional SAE project can not be accomplished, the SBAE teacher can use their creativity and community resources to encourage student success in an agriculturally-focused SAE. Callie shared that she "firmly believes that no matter the kid's ability that they can have an SAE and it can be a benefit to them."

Theme 3: Skill Development over Content Mastery

The third theme to be constructed was *Skill Development over Content Mastery*. Three codes were included with this theme: *Right to Learn*, *Inclusion or Illusion*, and *Building Bridges*. The first code constructed was *Right to Learn*. All students, regardless of ability, have the right to interact with their peers and practice career skills. In an SBAE program, all students have an opportunity to interact with agriculture if the SBAE teacher has modified appropriately. Nora talked about how we [as teachers] take away more opportunities for students than we should out of fear, stating “a lot of times they’re not allowed to do anything because they haven’t been allowed to do anything, and we don’t want them to hurt themselves.” Nora spoke about the importance of continuing to allow diverse learners to “keep working on so that they can be more unsupervised and self-sufficient.” Lillian shared a similar sentiment. She believes that regardless of the circumstances, all students have the right to learn in the best way for them.

Lillian shared her positive outlook on what some teachers could consider an overload. In one class period, she has “an average class size is 34. For the three classes that I'm teaching, I also have two interns and five kids that are in a leadership course. It's a constant circus.” Lillian’s total program speaks to her vision of an inclusive space within a structured environment. She shared that in her single-teacher SBAE program of approximately 160 students, she’s had diverse learners who “could blink and were as reactive as less than a six- week-old baby, to the valedictorian in the same black official dress flats.” Lillian stated that “a lot of people don't want to deal with diverse learners because it takes more effort,” when asked why she thought others may see her as an effective inclusive SBAE program.

The second code constructed under the theme *Skill Development over Content Mastery* was *Inclusion or Illusion*. Other than specific modifications, Heather pointed out that most

diverse learners simply need us to be patient in order for them to learn those target career skills, sharing that “more times than not, my IEP & 504 kids just need more time; they can do everything that everyone’s already doing in the gen ed space, they just need the format to be different.” Lillian is both a mom to a student with an IEP and herself a gifted learner. With daily reminders of the need for differentiated instruction, Lillian shared that she “deals with an alternative learner at home and the older I get and the more I teach, I’m very grateful for my brain. Part of me hates my brain too, and so in that way I think I’m able to relate to my SPED kids more because I’m so aware.”

The third code constructed under the theme *Skill Development over Content Mastery* was *Building Bridges*. Jennifer stated that the intentional grouping of students in targeted skill practice allowed for students to have an intentional support in place for success, sharing how her co-teacher assigns groups of three in the welding booth so that they can give each other feedback. Similarly, when they’re doing electrical wiring, they’ll be in groups so they can bounce ideas off each other. Lillian also uses a similar system to Jennifer, sharing that “every child learns differently, and as teachers when we have alternative learners in our space, we need to understand that once you make them feel like they belong, they can succeed - and that’s why I split them up.”

Theme 4: External Support is Essential

The fourth and final theme to be constructed was *External Support is Essential*. Included under this theme were two codes: *Parental Expectations* and *Strings Attached*. While it is the instructor’s responsibility to provide accommodations and make modifications to ensure the curriculum is accessible, guardian support was noted as a significant scaffolding support to promote student success in the classroom. Lillian shared the negative effect of not having parent

involvement, stating that “most parents and people that aren't in education don't get the awareness of how they learn and understanding how other people work because they're not around it.” Jennifer provided an example of parental support in a student's at home project. The student's family raised small scale livestock at their home and the student regularly worked with the animals in completing daily tasks. Due to an injury sustained when he was younger, the student was unable to complete the physical record keeping project assigned as part of the curriculum. The student's family supervised his work, recorded all time and activities spent on the project, and shared insights about the project with the teacher. Without that parental support, he would not have been able to achieve standard completion.

The second code constructed under the theme *External Support is Essential* was *Strings Attached*. SBAE teachers receive state funding based on their ability to complete program standards dictated by the state agricultural education program. Additionally, teachers can experience negative consequences from school-based supervisors or board of education staff if program success is not up to their expectations. Including diverse learners can lead to lower performance scores at competition for a variety of reasons; with the external concern for program achievement, SBAE teachers may not recruit diverse learners for competitive events in NFFA, therefore removing a pivotal opportunity for social and career skill development.

On the other end of the spectrum of administrative support, Jennifer shared that her program receives positive reinforcement from administration and the board of education regularly, stating that “they understand that not every member or student is going to be involved in FFA, but every student is going to walk through my classroom. At the end of the day, I would say [administration] doesn't care too much about CDE success.” Although her administration does not apply pressure for competition success, Jennifer strives to score well on applications

that represent her SBAE program as a whole. Jennifer shared that “it does look really well on our chapter when we do like the applications for national chapter, proficiencies; showing what we offer as a program.” Scoring well on applications that represent the entire SBAE program allows Jennifer’s administration to see that “we’re not just doing anything; we’re showing that we’re building relationships with students and emphasizing areas we can offer to students.”

Theme 5: Behavior Management

The fifth and final theme to be constructed was *Behavior Management*. Two codes were included under this theme: *Stress Slows Success* and *Pivot*. The first code *Stress Slows Success* hinges on the difficulties that arise from poor behavior management. Behavior management for a successful classroom environment is not a new concept. To allow students the freedom to learn, distractions must be limited. Classroom distractions can include undesired behaviors from irregulated students or stims of students with disabilities and ultimately promote stressful interactions. One strategy for limiting classroom distractions is implementing a constructive and welcoming environment. Callie spoke about her no tolerance policy for certain behaviors, and how she sets that bar immediately at the start of the term, sharing that “classroom culture is all about a teacher setting expectations. I set my expectations really high at the beginning of the year. We’ll have a lot of fun but I’m not playing around with your crap. I don’t bend on bullying.” Teacher expectations of students can be the same across all ability levels, especially in consideration of respect for another person’s wellbeing. Callie runs her classroom on a no tolerance policy, sharing, “I don’t care what your background is. I don’t care when you come into my classroom – where you’ve been or what you do, you’re welcome.”

Not having the resources needed to benefit both the teacher and students can cause unnecessary stress. Naomi shared that “sometimes I feel like they're not getting what they need because there's not enough of me to go around and they won't give me a paraprofessional.”

The second code included under the theme *Behavior Management* was *Pivot*. When students are engaging in undesired behaviors during instructional time, the instructor must make the choice to pivot and redirect the student’s energy and/or attention.

Nora designed her after school instructional times to engage students struggling with hyperactivity or focus disorders. Instead of forcing her students into a predetermined way of learning, she allows both the freedom of movement to coexist with the structure of curriculum. Nora’s competition practices are offered before or after school. As an engagement tactic, Nora “constantly has snacks in the lab because once they get here, they're just focused on how to find something to drink and how to find something they can eat.” To refocus students with attention issues, Nora regularly offers “a little bit of downtime, tell them where to find all their supplies, here's your scantron, here's how your materials are laid out, pick this up, go do this, and keep moving.”

Conclusions and Recommendations

This study sheds light on best practices for engaging diverse learners in a secondary school-based agricultural education program in Georgia through seven exemplars, specifically through a focus on Project-Based Learning (PBL). Agricultural education (AGED) was facilitated through project-based methods (McKibben et al., 2024; McKibben & Murphy, 2021) and solidified the need for formal legislation outline PBL and school based agricultural education (SBAE) (National Vocational Education Act, 1917; Smith & Rayfield, 2016).

Accessibility of the SBAE program does not unilaterally fall on the SBAE teacher. Facility accessibility is the responsibility of the local school system to be ADA compliant for all disabilities to ensure fair and equitable use. Additionally, Program of Work standard 42 addresses the requirement for specialized facilities and their needs, which can be assumed to include ADA compliance (Georgia Agricultural Education, n.d.). This standard is only met if the local system provides satisfactory completion. All secondary Georgia SBAE programs should require a current action plan for adapting all physical SBAE facilities and equipment to meet ADA compliance using CTAE funds or AGED specific grants to be completed in ten years or less.

Content modifications and setting consistent expectations, regardless of ability, are typically the responsibility of the SBAE teacher. Roberts and Harlin stated that knowledge is a byproduct of the project method (2007). In aligning with the FFA Motto, “learning to do, doing to learn,” educators are tasked with ensuring the SBAE is accessible for all students (National FFA Organization, n.d.). Georgia’s SBAE curriculum impact now includes the elementary level for students in kindergarten through fifth grade; with the passing of Senate Bill 330, Georgia piloted an elementary agriculture program focused on agriculture literacy and early introduction of agricultural concepts (Georgia Agricultural Education, 2025; Clemons et al., 2024; Clemons et al., 2018).

Study findings show that SAEs are not all created equally. Depending on the student’s resources outside of school and/or personal abilities, traditional SAE projects may not be a feasible option to meet the curriculum standard. Some teachers felt it was easier to not hold students accountable for a completed SAE project, while others thought outside of the box to create personalized SAE programs that do not create financial, physical, or emotional strain for

the student. Georgia Program of Work standards dictate that all students enrolled in the SBAE program must have an operational SAE. SAE for All outlines practical project ideas for a range of abilities but is currently not a widespread guide in Georgia SBAE programs. Elementary and middle school AGED are introductory courses in SBAE and allow students to engage in a range of agricultural topics. As an introductory course, SAE within the context of middle school SBAE should be further investigated in preparing students for the agricultural pathways offered on the high school SBAE level, in addition to the effectiveness of the middle school level SBAE teacher in establishing a solid PBL foundation (Hainline & Smalley, 2021; Eck & Davis).

The primary role of project-based learning is to present problems through real-life situations and allow individuals to develop techniques and solutions through practice (Stevenson, 1919). At least half of the study participants provided examples of operational SAE programs that were customized for a specific student to address accommodations. Fair doesn't mean equal. SBAE programs have the opportunity for students to showcase their understanding in a tangible way through project-based learning.

PBL allows educators and students to guide themselves through the curriculum with the end goal being to practice modern agricultural skills in a controlled environment. Stimson's original form of the project method intended to teach young farm boys' modern agricultural practices through their own farmland at home (1919); designing the project method to engage students in personalized learning through their immediate resources, Stimson created a self-reliant learning cycle. In addressing the need for standards-based instruction while also accommodating diverse learners, two major ideas came to light. At least two study participants utilized an electronic resource found on TeachersPayTeachers to provide instruction for diverse learners when traditional instruction occurred; the electronic resource was tagged for a

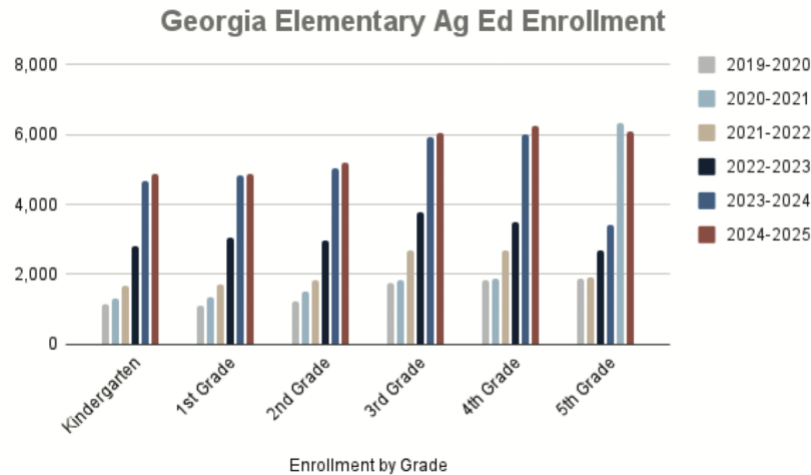
kindergarten through third grade level and includes basic math and phonics skills, as well as coloring and sorting activities.

All study participants utilized some version of One Less Thing curriculum. Four teachers shared that they pick and choose from One Less Thing curriculum and regularly add more engaging visuals to the presentations. Three teachers shared their firm opinion on fully including diverse learners in every activity that the whole class participates in, with special attention brought to the need for modifications to the activities being done. Most study participants utilized teacher created resources shared from other SBAE teachers or copyrighted materials from TeachersPayTeachers and One Less Thing. SAE project ideas and outlines are not typically shared like traditional curriculum and are often the product of imagination of the SBAE teacher.

In prioritizing skill development over content mastery, elementary agricultural education can become a focal point for the early introduction of agricultural concepts to hopefully promote intentional skill development through the continuation of the SBAE pathway through the secondary SBAE program. Elementary agriculture education has existed in Georgia since 2018, when Governor Deal signed Georgia SB 330, outlining the elementary agriculture pilot program. Elementary SBAE standards cover employability skills, agricultural systems, foundations of agriculture, leadership and career readiness, and natural resource systems (Georgia Agricultural Education, 2025); these foundational concepts engage students at a formative age in agricultural literacy (Clemons et al., 2024; Clemons et al., 2018) CTAE and SBAE provide opportunities for skill development and career exploration (Eck & Davis, 2024; Ireland, 2022). Figure 3.2 shows the enrollment increase in Georgia elementary agriculture programs from 2019 to 2025 by grade level.

Figure 3.2

Georgia Elementary Agriculture Education Enrollment for Kindergarten to 5th Grade



Note. Georgia Elementary Agriculture Education enrollment according to the Georgia Agricultural Education 2024/2025 Annual Report (Georgia Agricultural Education, n.d.).

SBAE teachers are arguably one of the busiest teachers in every school building. From completing the state mandated program of work, to fulfilling all requirements provided by the local school system, SBAE teachers are stretched thin. There were consistent opinions shared during the interview stage that enough support is not given for the teacher or students to be successful in the SBAE program. One teacher specifically shared that almost half her class load in one grade was documented IEP/504 and there was no additional paraprofessional or similar support in the room. Two veteran teachers shared the sentiment that you just have to get it done; differentiation as well as operating a successful SBAE program takes the teacher going the extra mile and being creative with their resources and time.

Parental involvement can be a successful external support if utilized intentionally. A study conducted on parents' value of their children learning about agriculture in school indicated that 72% of parents believe it is extremely important that their children learn about agriculture in school (Miller et al., 2025). With this statistic in mind, intentional partnership with parents and

guardians can greatly impact the future of agricultural education as well as impact the future of SBAE in Georgia. The relationship between parent, student, and teacher can also impact student's success in the classroom; if a parent or guardian has a negative connotation of the subject or instructor, a negative impact on the student's engagement or success could be noted (Schock & Jeon, 2023).

SBAE classrooms can become a dumping ground for behaviors as an elective course. Future research should be done to assess the prerequisite standards for gaining access to an SBAE course. Agricultural Education teachers are stretched too thin with minimal support. SBAE teachers involved in the study shared mixed reviews on external support. Half of the participants confirmed supportive administration and community partners. Half of the participants primarily rely on themselves or a fellow SBAE teaching partner.

Behavior management plans are not a one size fits every classroom strategy. Recchia & Puig's (2011) study explored behavioral approaches used by student teachers when working with diverse learners; study participants identified the need for gaining respect from students, whole class discussions on the challenges of behavioral needs, as well as identified feelings of discomfort in implementing harsh behavioral interventions (Recchia & Puig, 2011; Ramage, 2021). Future research should be conducted to assess the impact of SBAE teacher characteristics on the success of the SBAE program through PBL in working with diverse learners.

The three-component model is hard to achieve without external support. Intentional modifications to the SBAE curriculum ultimately happen because the SBAE teacher goes above and beyond to ensure diverse learners are included in the learning process. Creating meaningful partnerships between students of varying abilities has the potential to impact multiple students' social, emotional, mental, and physical well-being.

Inclusive learning environments can be complex to create. Successful inclusion requires, administrative support, support from special education personnel, a positive classroom culture, an effective teacher, and student-peer support systems (Mastropieri & Scruggs, 2001; Ramage, 2021). With the population of diverse learners expected to increase, research suggests teachers perceive themselves as unprepared to create an inclusive learning environment that accommodates all needs (Stair et al., 2010).

Recommendations

The researcher recommends that State SBAE staff or the local CTAE department conduct a needs assessment in ten years or less of all secondary SBAE programs to ensure ADA compliance of all SBAE facilities and tools. CTAE directors and school administration should be a regularly included partner in the local SBAE program.

A needs assessment should be conducted to determine which POW standards are necessary for program success and which could be cut to offer SBAE teachers more freedom to impact their own program. In the future, a request for an adjusted scale of standard completion is desired if diverse learners are involved in competitive events and score below the 30% standard cut off (C. Corzine, personal communication, October 17, 2025). Georgia Program of Work standards need to be reviewed to incorporate inclusion student participation.

Future research should be conducted in what types of students and at what rate are being placed into SBAE programs to ensure the SBAE teacher is being set up for success before program modifications are made. Independent variables to consider when successfully incorporating diverse learners in the three-component model: teacher's age, years of teaching experience, interaction with diverse populations beyond the classroom, and the amount of preservice training and continued professional development pertaining to diverse learners

(Hancock et al., 2024; Johnson et al., 2012). Georgia's Department of Education should employ a special education curriculum director to address gaps in the SBAE curriculum for supporting diverse learners in project-based learning.

Georgia SBAE should create a spotlight teacher on the Georgia FFA website to share success stories of SBAE teachers differentiating their program.

SBAE teachers should utilize support groups as a mainline attempt at immediate inclusion. The relationship between parent, student, and teacher can also impact student's success in the classroom; if a parent or guardian has a negative connotation of the subject or instructor, a negative impact on the student's engagement or success could be noted (Schock & Jeon, 2023). Child development and education research state that parental support is a key factor in what and how a child learns (Miller et al., 2025).

Chapter 4: Differentiated Instructional Strategies for Engaging Students with Disabilities in the School Based Agricultural Education Classroom and National FFA Organization

Abstract

Diverse learners can include students with special needs, autism, English Language Learners, and gifted individuals. The purpose of this study was to identify successful differentiated instructional strategies in engaging diverse learners in a Georgia secondary SBAE program through classroom instruction and the National FFA Organization (NFFA). Essential qualities of differentiated instruction are the promotion of active learning through hands on experiences, concrete or multi-sensory representations, cooperative learning, and real-life application of skills, and the incorporation of multiple intelligences and learning styles (Lawrence-Brown, 2004). This study was framed by Social Constructivism Theory (Vygotsky, 1962). The Zone of Proximal Development allows researchers to determine an individual's ability based on concrete observations, primarily expectations for age and mental development. Most secondary agriculture education classrooms experience a varying population of individuals with learning difficulties. Case Study Methodology (Yin, 2018) was used to explain a complex case through six exemplars. This case study highlighted secondary agriculture education programs in Georgia. Three themes were constructed from the data: Capable of More, SBAE is "Heart" Work, and Relationships are Foundational. Participants shared that scaffolded curriculum materials are essential for classroom success.

Key Words

Differentiated Instruction, Agricultural Education, Diverse Learners

Introduction

The National Association of Agricultural Educators (NAAE; 2013) Strategic Plan identified a need to increase recruitment of diverse populations in agricultural education (AGED) in addition to communicating the importance of diversity. Diversity in school based agricultural education (SBAE) is still a work in progress (Wood et al., 2023). Determining educational supports for a student can occur once an assessment on student engagement has been made, in addition to supports outlined in their mandated educational plan. Student engagement is not a singular concept – student engagement exists in a learning experience where cognitive, emotional, and behavioral participation are noted (Archambault et al., 2009). A lack of student engagement has been linked to boredom, perceived irrelevance of the content taught, and/or social, emotional, mental, or physical barriers (Anderson, 2013).

Student engagement can be altered by the environment, curriculum, and educator (Vygotsky, 1978). An educator that is supported with needed instructional resources, relevant professional development, and a positive working environment is typically inclined to be more caring and supportive towards their student body (Jennings et al., 2013; Miller et al., 2025). When students sense teachers care and support them, they are more likely engage positively in the academic environment (van Uden et al., 2014). Successful inclusion of diverse learners in the SBAE program initially begins with the educator. Research suggests that many teachers perceive themselves in being unprepared to address diverse learners' needs despite the increase in diverse populations in SBAE classroom (Stair et al., 2010). According to Giffing et al. (2010), only 76.9% of study participants were in favor of including diverse learners in their classroom.

Paraprofessionals are non-certified professionals who offer individualized support to students with an IEP or 504 as deemed necessary (Center for Parent Information and Resources,

n.d.). The role of a paraprofessional is to provide academic or behavioral support to one or multiple students in the classroom setting in addition to the general education teacher (Council for Exceptional Children, 2022). The special education workforce is consistently experiencing a high turnover rate each year (Stoffers et al., 2026). With the decline and turnover of special education staff, there are concerns for the lack of support needed in the general education space. As educational opportunities for inclusion have increased for students with disabilities, the need for educational support has increased (Giangreco, Broer, & Edelman, 1999). A rising concern in utilizing paraprofessional support to aid students with disabilities is that the paraprofessional becomes the primary educator (Giangreco & Doyle, 2017); inclusive education is meant to allow for social and physical interaction among students of all abilities (Mitchell, 2015).

Scaffolding is a tool used in education to establish small, manageable steps for students to complete within their zone of proximal development to reach the intended goal (Vygotsky, 1978). Certified teachers in Georgia are evaluated using the Teacher Keys Effectives System (TKES); the TKES rubric addresses planning, instructional delivery, assessment of and for learning, the learning environment, professionalism and communication (Georgia Department of Education, 2025). The necessity of scaffolding is addressed in each of the following TKES standards of evaluation for educators. Each standard maintains that an educator must meet each student in their ZPD and scaffold accordingly to ensure student success.

Table 4.1

Professional Standards and Descriptions for Georgia’s Teacher Keys Effectiveness System

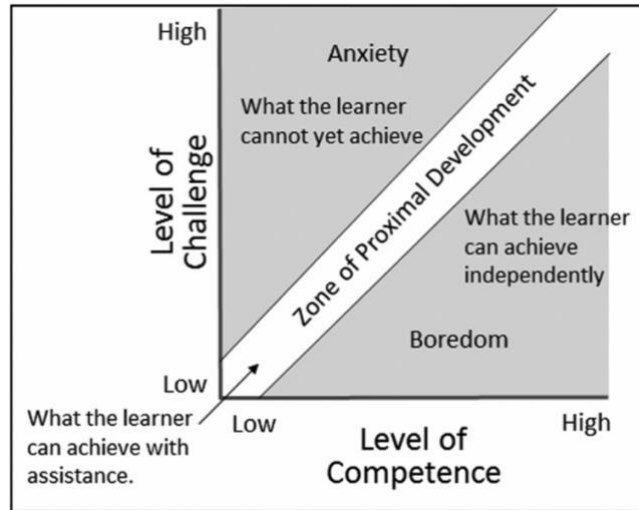
TKES Standard	Standard Description
Professional Knowledge	The teacher demonstrates an understanding of the curriculum, subject content, pedagogical knowledge, and the needs of students by providing relevant learning experiences.

Instructional Planning	The teacher plans using state and local school district curriculum and standards, effective strategies, resources, and data to address the differentiated needs of all students.
Instructional Strategies	The teacher promotes student learning by using research-based instructional strategies relevant to the content to engage students in active learning & to facilitate the students' acquisition of key knowledge & skills.
Differentiated Instruction	The teacher challenges and supports each student's learning by providing appropriate content and developing skills which address individual learning differences.
Assessment Strategies	The teacher systematically chooses a variety of diagnostic, formative, and summative assessment strategies and instruments that are valid and appropriate for the content and student population.
Assessment Uses	The teacher systematically gathers, analyzes, and uses relevant data to measure student progress, to inform instructional content and delivery methods, and to provide timely and constructive feedback to both students & parents.
Positive Learning Environment	The teacher provides a well-managed, safe, and orderly environment that is conducive to learning and encourages respect for all.
Academically Challenging Environment	The teacher creates a student-centered, academic environment in which teaching and learning occur at high levels and students are self-directed learners.
Professionalism	The teacher exhibits a commitment to professional ethics and the school's mission, participates in professional growth opportunities to support student learning, and contributes to the profession.
Communication	The teacher communicates effectively with students, parents or guardians, district and school personnel, and other stakeholders in ways that enhance student learning.

Vygotsky's (1978) belief of teaching involved scaffolding the lesson to meet an individual in their zone of proximal development. Figure 4.1 shows Schmulian et al.'s (2019) interpretation of what a learner can achieve in terms of the level of difficulty matched with the individual's competence level.

Figure 4.1

Visual of Vygotsky's 1968 Zone of Proximal Development



Vygotsky's zone of proximal development (John-Steiner & Mahn, 1996)

Note. Adapted from the 2019 Schmulian et al.'s article referencing Vygotsky's Zone of Proximal Development (1978).

Differentiated instruction is as important for students who find school easy as it is for those who find it difficult (Lawrence-Brown, 2004). One major concern of ability diversity in a general education setting is the common trend of setting low expectations for students (Will & Najarro, 2022); in classrooms that include diverse learners, care must be taken to apply differentiated practices to aid each individual, whether they are gifted or in need of special education services (Lawrence-Brown, 2004). Two essential qualities of differentiated instruction are: promotion of active learning through hands on experiences, concrete or multi-sensory representations, cooperative learning, and real-life application of skills, and the incorporation of multiple intelligences and learning styles (Lawrence-Brown, 2004). Similarly to Vygotsky's idea of scaffolding, Lawrence-Brown notes the concept of find versus guess; all students, regardless of ability, can and should be challenged academically until they reach a continued level of frustration (Lawrence-Brown, 2004).

Inclusion of diverse learners is not simply placing students into the general education setting and expecting the lead teacher to deliver the curriculum (Jardinez & Natividad, 2024);

inclusion is the existence of only one unified education system that involves all students in an equitable way (Idol, 1997; Dixon, 2005; Jardinez & Natividad, 2024). Allowing students of all abilities to coexist in a common setting with intentional instruction scaffolding for all levels, encourages empathy (Jardinez & Natividad, 2024); ultimately, the end goal could be that students with disabilities who have been regularly included in general education spaces are able to function in society with fewer supports (Dixon, 2005; Mehta, 2025).

With potentially wide ranges of academic ability in one classroom setting, a primary concern could be student academic achievement, suggesting that an inclusion classroom may or may not be the best learning environment (Ford, 2013; Delgaard et al., 2022). Co-teaching, differentiated instruction, and peer-mediated instruction and interventions are three methods of inclusion for students with a learning disability (Ford, 2013). Students who are co-teach receive their primary instruction through a minimum of two certified educators specialized in a content area (Council for Exceptional Children, n.d.). Differentiated instruction provides students with instructional materials and methods designed for individual needs (Scruggs, Mastropieri, & Marshak, 2012). Peer-mediated instruction and interventions can include direct tutoring student-to-student or indirect modeling of desired results using the buddy system (Kalfus, 1984; Chang & Locke, 2016; Mahoney, 2023).

Vygotsky's ZPD outlines how a student can learn and to what degree, specifically with what supports are needed to engage the individual's interest while limiting frustration during the learning process (1962). According to the National Center for Education Statistics (2025) from the 2020-2021 academic year, the average public school class size for middle and secondary/high school is 22.4 to 23.3. Differentiated instruction is integral to the success of individuals in an inclusion classroom (Gentry et al., 2013); differentiated instruction is described as a safe and

challenging learning environment, with multi-level teaching addressing individuals, target groups, and whole class settings with specific, measurable, and attainable learning targets, ongoing assessments, varied use of resources, as well as shared teaching responsibility to include teacher-lead and student-lead instruction (Pădeanu, 2023; Tomlinson, 1999). Incorporating differentiated education into a mixed-ability classroom environment can discourage the idea of “teaching to the middle of the class;” this idea can have damaging effects for both gifted students and students with learning disabilities (Rayfield et al., 2011).

SBAE programs are a melting pot of student abilities and interests and can easily benefit from differentiated instruction being used (Norris, 2025). Another option for supporting diverse learners in a general education classroom can be a formal paraprofessional or a teacher-appointed peer (Center for Parent Information and Resources, n.d.). Leaning into the teacher-appointed peer method allows students to engage with other individuals their age at a formative point in life; encouraging supported peer relationships can help bridge social or emotional gaps for diverse learners (Carter et al., 2007; Lin et al., 2025).

There are numerous variables when considering successful engagement of diverse learners in a structured general education placement like SBAE (Wood et al., 2023). Students are typically receptive to adults they know and trust (Pringle, 2018). If a teacher mentioned the inclusion of students with diverse learning needs when the understanding that all students are welcome, the likelihood would be that students would have a positive attitude towards those differences (Campbell, 2007). Using the buddy system is a regular tool to differentiate classroom structure or curriculum (Chan & Locke, 2016; Mahoney, 2023). Peer support arrangements are now being recommended as an alternative to adult-delivered support (Downing, 2006; Giangreco et al., 2004; Scheef & Buyserie, 2020). These peer interactions create another layer of modified

support for diverse learners and occur under the supervision on the primary teacher (Carter et al., 2005; Carter & Kennedy, 2006).

Another major variable in considering the successful engagement of diverse learners in a structured general education placement like SBAE, is the will of the student needing the accommodation or modification of the curriculum; while accommodations can be provided and classroom instruction materials modified, if a student is unwilling to try their best then learning will not occur (Carter & Hughes, 2005).

Urban SBAE programs are a wealth of knowledge on diversifying agricultural curriculum for nontraditional agriculture students (Martin, Mumma, & Van Der Kamp, 2024). Yopp et al. (2018) conducted a study of SBAE programs and the individuals' experiences within those programs; individuals were engaged in agriculture through both activities and the traditional curriculum. Operational SAE projects outside of the SBAE classroom are not feasible for certain populations (Eck & Davis, 2024); school-based projects are considered a functional option in these cases. In engaging diverse learners, on-campus facilities with operational project options become essential to the program's success (Anyahdoh & Barrick, 1990; Dyer & Osburne, 1996), highlighting the necessity of external support for SAE programs to be successful for diverse learners (Rubenstein & Thoron, 2014).

Research suggests that secondary SBAE programs prepare students for successful careers in the agriculture industry (National FFA Organization, n.d.). While diversity has been included in the NFFA's outreach in the last decade, research specific to including diverse learners in the secondary SBAE classroom and the NFFA is lacking. This study sought to identify various instructional strategies' success for diverse learners in the Georgia secondary SBAE classroom and the NFFA.

Theoretical Framework

This study was framed by Social Constructivism Theory (Vygotsky, 1962). The Zone of Proximal Development allows researchers to determine an individual's ability based on concrete observations, primarily expectations for age and mental development. Within the SBAE setting, individuals of varied academic, emotional, and physical ability are grouped together; an understanding of ZPD allows the instructor to scaffold materials and resources to be accessible for all. This study was created to identify best practices for teaching students with diverse learning abilities in a secondary School Based Agriculture Education program (SBAE), specifically highlighting opportunities for leadership development in the NFFA and curriculum opportunities in the classroom and lab.

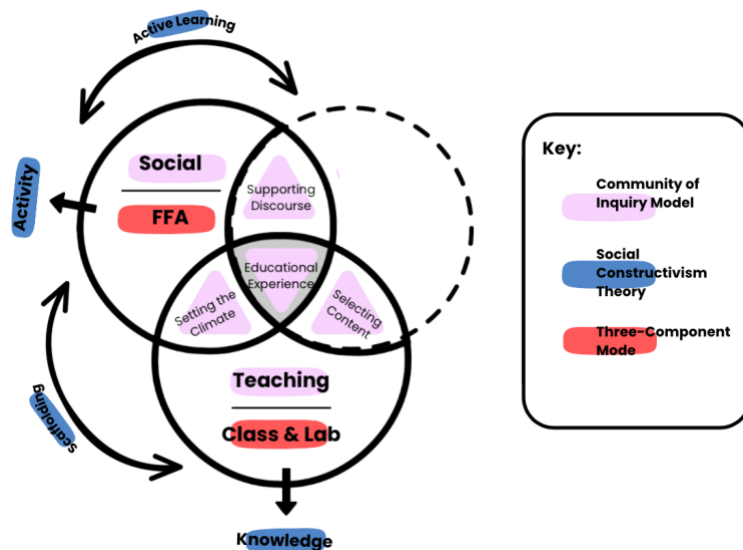
The Community of Inquiry (CoI) model (Garrison et al., 2001) mimics the intracurricular nature of the three-component model (National FFA Organization, n.d.). SCT (1978) states that learning coincides with interactions with individuals through shared experiences. The FFA and Classroom/Lab components (National FFA Organization, n.d.) as well as the social and teaching processes (Garrison et al., 2001) culminate in an experiential process of learning through formal instruction and skill development. Through the social opportunity of the NFFA and the instructional opportunity of the classroom and laboratory, students can engage in active learning through scaffolded curriculum as SCT (Vygotsky, 1968) outlines. Within the FFA/Social space of the CoI (2001) model and Teaching/Class & Lab of the three-component model (n.d.), SBAE teachers must select curriculum content that is accessible for all learners in the total program, support discourse to encourage content and/or skill understanding, as well as set an accepting climate suitable for student learning and interactions. SBAE facilitates the instruction of

transferrable skills that require students to both physically and mentally engage with a topic, therefore social connections and environmental awareness become nonnegotiable for all parties.

Figure 4.2 depicts an overlap of Vygotsky’s (1968) SCT, the three-component model (National FFA Organization, n.d.), and the CoI model (Garrison et al., 2001) specific to social interaction through the NFFA and teaching instruction through the classroom and lab setting.

Figure 4.2

Interpretation of How National FFA Leadership and Classroom Differentiation Opportunities Overlap with SCT, CoI, and Three-Component Model



Note. Interpretation of The Community of Inquiry Model (Garrison et al., 2001), the Three-Component Model of Agricultural Education (National FFA Organization, n.d.), & Vygotsky’s Social Constructivism Theory (1968).

Purpose

The purpose of this study was to investigate various instructional strategies’ success for diverse learners in the Georgia secondary SBAE classroom and the National FFA Organization. The objectives that guided this study were as follows:

1. Determine School Based Agricultural Education teachers' experience when working with diverse learners in a secondary Georgia School Based Agricultural Education program.
2. Identify educational and preparation supports provided to secondary School Based Agricultural Education teachers working with diverse learners in Georgia.
3. Identify specific instructional strategies used to positively impact diverse learners in a secondary Georgia School Based Agricultural Education program.

Methods

Most secondary agriculture education classrooms experience a varying population of individuals with learning difficulties (Hoerst & Whittington, 2009). This qualitative research study sought to understand best practices for engaging and differentiating the SBAE program through Case Study Methodology (Yin, 2018) for diverse learners. This case study was approached as an exploratory study, to engage with teachers identified as best in their field in teaching diverse learners, for the purpose of identifying best practices for modifying SBAE instruction and the classroom environment. A descriptive analysis of individual teacher interviews allowed the case study to ascertain relevant themes that bring to light the art of teaching diverse learners.

Qualitative research is preferred when addressing building a case that investigates experiences or accounts of individuals (Creswell & Creswell, 2014). A case was built through interviews as the researcher sought to identify best practices for engaging diverse learners in secondary SBAE programs in Georgia as well as any curriculum or curriculum adaptations deemed successful by study participants. This part of the study aimed to specifically understand how students with learning difficulties, physical/mental disabilities, etc., are successfully included in the three-component model through exemplar teachers' point of view. Participants in

the study ranged from four years of experience to twenty-one years of experience, providing an early career teacher's perspective as well as a veteran teacher's perspective on the benefits of project-based learning in the SBAE curriculum.

The case bounds involved interviewing certified secondary SBAE teachers in Georgia with the intent to identify best practices for engaging diverse learners in the 3-component model. Specifically, how diverse learners engage with AGED curriculum standards, participate in leadership and career development events, and complete an authentic SAE. The individuals identified for participation in the study were provided by state AGED staff; the request made to state AGED staff required identified teachers to be perceived as skilled at differentiating FFA, SAE, and classroom instruction specific to diverse learners. Participants in the study were asked to complete an interview with the researcher and provide verbal examples of total program differentiation as well as tangible examples of differentiated SAE plans, curriculum assignments/rubrics/etc, and competition preparation do's and don'ts for diverse learners.

The case was structured as holistic-multi case. Yin states that case study is an empirical inquiry that investigates the case or cases and addresses the "how" or "why" questions concerning the identified area of interest (Yazan, 2015; Yin, 2002). Each of the six identified participants provided their context of how diverse learner can be and should be included in the 3-component model. Both an early career teacher and veteran teacher input was considered, as well as consideration for supplemental materials provided by participants highlighting differentiation. This study focused on the interviews conducted to build the case of how diverse learners are included in the secondary SBAE program in Georgia (Yin, 2002). Supplemental materials like lesson plans, project examples, and competition preparation materials were used to triangulate results and ensure validity. Yin suggests the use of six evidentiary sources in case study research:

documentation, archival records, interviews, direct observations, participant observation and physical artifacts (2002); this study specifically utilized documentation, archived interview records, interviews, participant review of transcripts, and physical artifacts in the form of curriculum materials and/or CDE/LDE preparatory materials.

Instrumentation

Interviews were conducted with a researcher developed instrument with 36 open-ended questions. The researcher used semi-structured interview protocol to develop the instrument. This is a part of a larger study conducted to identify successful instructional strategies for students with learning difficulties in secondary agricultural education. Questions involved program and instructor characteristics, details regarding specialized curriculum and facilities, differentiated SAE and FFA opportunities, participants' self-assessment of differentiation ability, and professional development opportunities in differentiation specific to SBAE. The instrument was developed using Yin's Case Study Methodology Research Methods (2018) as a guide for identifying best practices for engaging diverse learners in the secondary Georgia SBAE program through exemplar perspectives.

Data Collection

Exemplar SBAE teachers were identified by Georgia SBAE state staff. The researcher asked state staff to identify middle school SBAE teachers who differentiated the SBAE program well for diverse learners. Limited middle school responses were received. The researcher asked state staff to additionally identify high school SBAE teachers who differentiated the SBAE program well for diverse learners. 13 total teachers were identified and represented secondary SBAE programs. 11 out of 13 teachers contacted responded as willing to participate in the case study; five of the 11 SBAE teachers agreed to participate in the study but did not complete an

interview or provide supplemental materials, two of the 13 SBAE teachers did not respond when contacted. Participants in the study are active SBAE teachers in a secondary school.

Zoom interviews were conducted with six exemplar SBAE teachers. Case study participants were contacted at least one week prior to their scheduled interview; all participant interviews were completed within one month's time from the initial email invitation. For each interview, only the case study researcher and one SBAE teacher were present. All interviews were conducted in August of 2025 for a total run time of 6.78 hours, or 407 minutes.

Supplemental materials were requested at the end of each interview for triangulation of results. Supplemental materials provided proof of differentiation through modification in the SBAE program. These materials included: lesson plans, project rubrics, assignment examples. Two participants shared a teacher-created lesson resource. Four participants shared resources created by copyright sources like TeachersPayTeachers and OneLessThing; copyrighted resources included: scaffolded guided notes worksheet with a summative assessment, FFA emblem cut and paste activity, and an agricultural workbook for special needs students designed for grades kindergarten through fifth.

Participants

The researcher initially contacted state Agricultural Education staff to identify potential case study participants who taught middle school level SBAE and could be identified as proficient at differentiating the three-component model for diverse learners. With the limited number of middle school agriculture teachers identified by state staff, high school agriculture teachers, also identified as exemplars in differentiation by state staff, were contacted to increase case study responses based on state staff recommendations.

Of the 13 teachers identified by state staff, only two were middle school SBAE teachers. The researcher contacted all 13 teachers identified by state staff as exemplar teachers in differentiation. All 13 teachers were classified as secondary level SBAE teachers; secondary SBAE teachers are certified to teach sixth through twelfth grade AGED. 11 teachers responded as willing to participate in the study. Five of the 11 teachers who responded to the initial study invitation did not complete an interview or provide supplemental materials. Two of the 13 SBAE teachers contacted did not respond when contacted about study participation. 11 out of the 13 SBAE exemplar teachers identified as female; the two SBAE teachers that did not respond when contacted about study participation identified as male. The researcher provided their perspective as an exemplar in SBAE differentiation for diverse learners; the researcher represented middle school SBAE and identified as female. Table 4.2 depicts the characteristics of participants involved in the case study.

Table 4.2

Characteristics of Study Participants

Pseudonym	School Level	Teachers/Program	Community	Years Teaching	Education Level
Nora	High	3	Rural	21	EdS
Lillian	High	1	Urban	19	PhD
Callie	High	2	Rural	14	PhD
Jennifer	High	2	Rural	8	EdS
Heather	Middle	1	Rural	8	EdS
Naomi	Middle	1	Rural	4	Masters

Data Analysis

Open, axial, and selective coding were used to review the data with each study participant over a two-week period post interview to ensure accuracy of themes (Fram, 2013). Participants were asked by the researcher to agree, disagree, or edit themes and codes to more precisely reflect what they meant to convey in their interview via member checking. Memos were

recorded by the researcher during participant interviews; participant reactions, potential emerging themes, and relevant thoughts were recorded and uploaded to a secure Box Folder, as approved by IRB. Themes and codes were reviewed by the case study researcher and study participants on an individual basis to ensure accuracy (Creswell, 2009). The researcher sought to identify best practices for engaging diverse learners in the total SBAE program in secondary schools in Georgia from the view of exemplar SBAE teachers.

Trustworthiness was established through rich, thick descriptions using direct quotes throughout the study to provide a clear understanding of best practices for engaging diverse learners in secondary SBAE programs in Georgia, with specific interest in highlighting how diverse learners are included in the three-component model (Croom, 2008). These rich descriptions allow the reader to determine transferability and applicability of all findings (Guba, 1981). Reliability was established through a continuous review of the themes and codes with reflective memos, as well as review and debriefing with each interviewee and the advising graduate committee member to ensure transcribed interviews were accurate as well as final themes. Each study participant was contacted at least once post-interview to offer insight on provided interview transcriptions with identified codes and themes. Three participants accepted the codes and themes as presented, three participants provided further in-depth descriptions of program details that allowed for the expanding of themes to occur. Each of the three participants who offered further feedback have taught in a Georgia secondary SBAE program for more than ten years. Of the three teachers who accepted the presented codes and themes as is, all have taught in a Georgia secondary SBAE program for less than ten years.

Triangulation is a validity procedure where researchers search for convergence across multiple different sources of information to form themes in a study (Creswell & Miller, 2000).

Zoom interviews, SBAE teacher shared experiences, and supplemental material documents aligned with the curriculum were used for triangulation. Supplemental materials were reviewed by the researcher to determine if study participants used differentiation methods in their curriculum materials, SBAE facilities, or activities, and how those differentiation methods were successful for diverse populations.

Supplemental materials were requested from study participants to triangulate data collection and provide evidence of differentiation in the total SBAE program. Three teachers provided scaffolded worksheets, including guided notes and interactive worksheets. Three teachers provided PowerPoint presentations; presentations had evidence of scaffolding through preset formatting guides and instructional pages as well as visuals to compliment written descriptions. One teacher provided one formal assessment. Four teachers provided five activity guides; activity guides included cut and paste activities or inquiry-based partner assignments. One teacher provided two modified SAE plans for students with autism. Two teachers provided formal lesson plans covering one unit of instruction; lesson plans had evidence of resources used, differentiation techniques, and curriculum guidance. Two teachers provided an agricultural workbook created for grades kindergarten through fifth. 13 assignments provided by the participants were copyrighted materials and sourced from TeachersPayTeachers or One Less Thing. Of the 24 supplemental materials provided to the researcher, 11 were created by the SBAE teacher who provided it.

Supplemental materials provided by study participants were analyzed for evidence of differentiation in the secondary SBAE program specific to each teacher. Supplemental materials were grouped by type. Language identifying differentiation was highlighted by the researcher and compared against similar materials. Differentiated evidence from supplemental materials

was then compared to the original interview transcript; overlap of differentiated language in the interview and supplemental materials was noted by the researcher and provided context for each teachers' participation in the study.

The limitations of this study were (1) findings may not be generalized beyond the current sample, and (2) the researcher only has access to information disclosed by teachers during the interview and supplemental materials provided post-interview.

Reflexivity Statement

The researcher acknowledges their personal interest in engaging diverse learners in secondary SBAE programs, specifically how diverse learners are incorporated in the three-component model (National FFA Organization, n.d.). In five years of teaching a middle school SBAE program, the researcher has found a passion for teaching diverse learners. Within the last two years, intentional requests to the registrar and lead autism teacher were made to rotationally include diverse learners in the researcher's SBAE program. Additionally, the researcher's spouse is a current special education resource teacher in the same school building. Intentional requests to the lead special education teacher were made to regularly include students in the general special education setting in the researcher's SBAE program. As a result of those requests, the researcher desired to identify exemplar secondary SBAE programs in Georgia to model after to ensure diverse learners received a high quality secondary SBAE program experience.

Findings

After analyzing case study participant responses on best practices for engaging diverse learners in a secondary SBAE classroom through differentiated instructional techniques, three themes were constructed from the data, (1) SBAE is "Heart" Work, (2) Capable of More, and (3) Relationships are Foundational, along with associated codes. See Table 4.3.

Table 4.3*Summary of Themes and Codes*

Theme	Code	Description
SBAE is “Heart” Work	Personal Connection	Teachers experience an individual in their personal lives that impacts their willingness to teach diverse learners.
	Hidden Talent	Some teachers have adapted over time and are notably successful in teaching diverse learners.
Capable of More	Academic Support	SBAE curriculum was adapted physically or mentally for student success.
	Scaffold Prep	Some teachers provide scaffolded materials to hit the intended learning target in a timely manner.
	Teacher Training	Professional development offered to teachers specific for teaching diverse learners
Relationships are Foundational	Buddy System	Teachers intentionally pair students in small groups to provide academic or social support.

Theme 1: SBAE is “Heart” Work

The second theme to be constructed was *SBAE is “Heart” Work*. Two codes were included under this theme: *Personal Connection* and *Hidden Talent*. At least half of the participants shared a personal connection with teaching diverse learners in the SBAE program. Lillian’s own child receives special education services, so she felt that she was more receptive to students with special needs. Lillian stated that she does all the things necessary to make each kid feels like they’re apart. As a parent, Heather shared that the older my child gets, the easier the classroom is, that as you’re learning things as a parent and parenting your own child, it just gets easier in the classroom. Callie spoke about her love for the special education population and how she enjoys the challenge of finding how they fit into her program’s puzzle.

The second code constructed under the theme *SBAE is “Heart” Work* was *Hidden Talent*. As with most things in life, everyone is not good at everything. With Nora’s consistency to gathering student specific data on their academic ability, she is able to request placement changes if the data implies a student is excelling at the expected level. With that ability, she assumes that’s why she has some of the highest levels of IEP and 504 students in comparison to her coworkers. Jennifer maintained that her inclusion was intentional and that everything in her program stemmed from the love she has for her students. Jennifer shared that everyone has a place in her classroom; there’s nobody that should feel excluded for any reason and there’s a place for everybody in our [NFFA] organization.

Theme 2: Capable of More

The first theme constructed was *Capable of More*. Included under this theme were three codes: *Academic Support*, *Scaffold Prep*, and *Teacher Training*. The first code under the theme of *Capable of More* was *Academic Support*. Understanding that all students can be actively involved in the classroom environment and successful with the right supports is essential for students to succeed. Lillian’s program regularly includes diverse learners, more specifically students from the inclusion classroom who are diagnosed severe autistic. Lillian shares the sentiment that anybody can learn, we just all learn differently. One student added to Lillian’s class was nonverbal and unable to participate in regular classroom curriculum worksheets or research; Lillian paired this student with an accelerated student to prove that all students can be academically supported. Standards-based instruction should be provided to all students regardless of ability; however, Lillian shared a different perspective, stating, “we’re so focused on the standard they need to learn that, no, this kid doesn’t need to know that there are different soil particles. Allowing students of different abilities to work together allows for an engaging

partnership that both parties can profit from. Lillian encourages her accelerated students to teach agricultural concepts to students with diverse learners on their level, sharing that her accelerated students may take an “alternative learner outside and actually dig – they’ll see the root systems, where the worm’s home is.”

The second code constructed was *Scaffold Prep*. Some teachers provided scaffolded materials to students for success in hitting the intended learning target in a timely manner. Nora’s program regularly scaffolds all classroom assignments, competition study materials, and related content so that all students, regardless of IEP or 504 paperwork, can receive accommodations that are beneficial to their success academically. She uses Wayground, a program formally known as Quizizz, to provide accommodations and generate comprehension data. Nora shared, “my kids are doing the exact same thing that somebody else is doing, just with help. Let’s just don’t cheat them of the opportunity because they’re capable.” Nora explained the Wayground program and how she implements the tool in her entire SBAE program:

Wayground generates so much data. You can set up accommodations on there; it does read aloud and they can put in headphones. They get practice tests. It has a dyslexia font. If I set up accommodations for that student, those accommodations will transfer over to other teachers who share that student. It translates if you have English language Learners; it’ll translate into their language automatically, so you don’t have to do anything. You can set up assessments in there and whole lessons. You can turn off the leaderboard for nervous kids. There are redemption questions for targeted practice. You can turn off sound effects if they’re distracting, extend question and answer time, extend deadlines, you can give hints; and you can set all of this up for every single kid.

The third and final code under the theme *Capable of More* was *Teacher Training*. Most participants shared that training in diverse learner support and methods for modifying curriculum are not regular opportunities offered by their school districts. Callie's school district was the only reported system that provided any specialized accommodation or modification training. All participants noted that they had no memory of any differentiated instruction workshops or training seminars offered by the Georgia Vocational Agricultural Teachers Association.

Theme 3: Relationships are Foundational

The third and final theme to be constructed was *Relationships are Foundational*. Included under this theme was the code: *Buddy System*. All participants in the study shared how imperative the buddy system was to the success of the SBAE program. As class sizes continue to grow, behavior issues become harder to manage, and less support staff being available, it's essential that teachers find ways to be successful with the resources they already have. Using the buddy system allows for two-dimensional differentiation. Both the lower and higher performing students can be served. Specifically, higher performing students can serve as an academic support underneath the teacher. Naomi shared that the reason she uses the buddy system in her room is for her sanity, stating that she has twenty-five students in the sixth-grade class and ten of them are special needs. She felt that partnering her students allowed her to not be so stretched thin. Nora used a similar strategy and called her higher performing students mini professors. Callie used job assignments to create a buddy system. As jobs are chosen from the work list, she can identify patterns and assign students based on performance.

Both Lillian and Jennifer took a compassionate approach to the buddy system. Before placing students together, Jennifer has a prior conversation with her students to ensure expectations for the relationship are set and that a positive interaction is possible for both parties.

Lillian encourages a whole class compassion approach through immediate diversification and implementation. She shared that “the best thing that I’ve ever done is that [alternative learners] don’t have their own table. I have to split them up because if you put all the kids that are coming to you from an inclusion class at one table, then they feed off each other.” Lillian goes above and beyond to ensure a positive classroom culture where all students, regardless of ability, are engaged and contribute to classroom discussions. To achieve a high level of engagement from all students, Lillian prioritizes “spending the first couple of weeks of class playing cards and board games to level the playing field. Once we build that atmosphere of comfort and safety, then I feel like my kids are ready to learn.”

Conclusions and Recommendations

This study sheds light on best practices for engaging diverse learners in a secondary school-based agricultural education program in Georgia through seven exemplars, specifically through a focus on classroom differentiation techniques and supports and student inclusion in the National FFA Organization.

The National Association of Agricultural Educators (NAAE) Strategic Plan (2013) identified a need to increase recruitment of diverse populations in agricultural education in addition to communicating the importance of diversity. Diversity in SBAE is still a work in progress (Wood et al., 2023). An educator that is supported with needed instructional resources, relevant professional development, and a positive working environment is likely to be more compassionate and supportive towards students with diverse learning needs (Jennings et al., 2013; Miller et al., 2025). SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Miller et al., 2025; Ramage,

2021; Stair, 2009). Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010).

Educators are assessed periodically throughout the school term by local administration to ensure rigor and relevance are maintained. Teacher effectiveness assessments (like TKES) may not take into consideration the teacher's general education population versus diverse learners' population when assessing the impact of teacher performance. Webster (2014) stated that there is a need for inclusion education for teachers, and that providing teachers with resources and staff training can lead to a better understanding of inclusive practices. Intentional inclusion must be initiated by the educator and general education students if the SBAE program desires to promote diversity and inclusion.

Both students with disabilities and general education students can experience a lack of engagement in the classroom setting. This lack of student engagement has been linked to boredom, perceived irrelevance of the content taught, and/or social, emotional, mental, or physical barriers (Anderson, 2013). Each teacher involved in the study shared a personal connection and heart for teaching diverse learners. The researcher believes this care for the special needs populations strongly correlates to the participants being identified by state staff as exemplars for engaging diverse learners in SBAE. When students sense teachers care and support them, they are more likely to engage positively in the academic environment, reinforcing the correlation between the teacher's love for the special population and the students' interest (van Uden et al., 2014). Research suggested that the inclusive nature of SBAE programs is not the norm. Whent's (1994) study states agricultural educators need to make greater strides toward acknowledging their unconscious biases toward people of diverse populations.

Historically, agriculture has not been entirely inclusive of diverse populations. This case study revealed a personal connection between the participants and diverse learners, which can be assumed as a reason for their success. Rita Pierson, a retired educator and TedTalk speaker, famously coined the phrase, ‘kids don’t learn from people they don’t like’ (2013). Each exemplar shared why teaching diverse learners is important to them. Lillian has a child who receives special education services. Naomi has a cousin who is autistic. Nora has a child with a learning disability. Callie shared her love for diverse learners. Heather stated how diverse learners can outperform general education students.

Low expectations for students will set them up for failure. Students with diverse learning needs can practice the same standards that general education students do. The findings show that a majority of teachers have limited issues including diverse learners in the hands-on nature of SBAE; differentiated instruction, like SBAE’s trade skill nature, is as important for students who find school easy as it is for those who find it difficult (Lawrence-Brown, 2004). Two exemplars from the study shared strong opinions on the intentional inclusion of diverse learners and understanding that all students are capable of practicing educational standards, which supports the idea that true inclusion is the existence of only one unified education system that involves all students in an equitable way (Dixon, 2005; Idol, 1997).

Assistive technology like Wayground is an assistive digital tool for providing accommodations specific to a student as well as collecting data across multiple teachers. Wayground can be used throughout the three-component model (National FFA Organization, n.d.) to facilitate IEP and 504 accommodations as well as maintain standards-based instruction for the majority of academic abilities.

Webster (2014) stated that there is a need for inclusion education for teachers, and that providing teachers with resources and staff training can lead to a better understanding of inclusive practices. Intentional inclusion must be initiated by the educator and general education students if the SBAE program desires to promote diversity and inclusion. If SBAE programs do not foster a climate of inclusion, evidence suggests that minority students will feel less inclined to participate (Scheef & Burrows, 2023). Giffing et al. (2010) reported only 76.9% of study participants being in favor of having diverse learners in the SBAE program.

While the relationship between student and teacher is likely to positively impact a student's experience in the classroom, intentional student support pairings can also aid in the student's success. With the high turnover rate of special education support staff (Stoffers et al., 2026), teachers turned to peer support systems to employ scaffolded support. Scaffolding is a tool used in education to establish small, manageable steps for students to complete within their zone of proximal development (Vygotsky, 1978), using peer support systems, students receiving immediate feedback and support on demand from neighboring students. Creating a buddy system allows for two-dimensional support.

Providing curriculum accommodations can be beneficial to all students regardless of academic labels. 65% of secondary teachers surveyed reported that all students can benefit from classrooms that include general accommodations in an inclusive learning environment (Downing & Peckham-Hardin, 2007; Ramage et al., 2021). In creating an inclusive learning environment with accommodations available to all students, secondary teachers perceived students to be able to obtain a greater awareness of others' needs, learn to tolerate differences and celebrate individuality, and show empathy and compassion for others (Downing & Peckham-Hardin, 2007; Ramage et al., 2021). SBAE programs benefit from an inclusive learning environment as

instructional practices are adapted to teach through experiences modeled in a student's preferred learning style; positive growth can be achieved in the SBAE context with diverse learners through inclusive learning environments (Ramage et al., 2021). Inclusive learning environments do not exist simply by adding general education students and diverse learners in the same classroom. Allowing students of all abilities to coexist in a common setting with intentional instruction scaffolding for all levels, encourages empathy (Jardinez & Natividad, 2024). The end goal of inclusive learning environments should be that diverse learners are able to function in society with fewer supports (Dixon, 2005; Mehta, 2025).

Recommendations

The following recommendations are offered for future research. Investigate the student experience with best practices for engagement in secondary SBAE for diverse learners. The current study focused on exemplar teachers who were well known to state SBAE staff for differentiation in their SBAE program.

Further in-depth teacher preparation training with special needs populations has the potential to foster personal connections between the SBAE teacher and special populations. Intentional collaboration between the SBAE teacher, Special Education representative, and guardian is needed prior SBAE program involvement to address expectations and limitations on an individual student basis.

Student population can impact a teachers effectiveness score and should be documented. Teacher effectiveness assessments should include notation of special populations during evaluations to provide context.

Teachers should modify curriculum materials to only assess the targeted skill. When creating or modifying assignments, clarify what the goal of the activity is. If the goal is

researching a topic and creating a PowerPoint, scaffold the PowerPoint presentation before assigning to students to create a streamlined effort.

GVATA should facilitate or host professional development twice a year in working with diverse learners in SBAE. SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Ramage, 2021; Stair, 2009). Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010)

Technology programs like Wayground should be implemented in the SBAE program to provide specific accommodations on digital assignments in addition to two-dimensional peer support for all program activities. Facilitating curriculum accommodations through digital assistive technology and peer support could positively benefit diverse learners in the secondary SBAE program.

Chapter 5: Conclusions and Discussion

This dissertation sought to identify best practices for engaging students with learning difficulties in secondary School Based Agricultural Education programs in Georgia through the three-component model, Project-Based Learning, and classroom differentiation techniques.

Summary of Findings by Study

Article 1:

Objective 1: Determine characteristics of targeted School Based Agricultural Education teachers

The original selection of participants intended to only capture middle school SBAE program information regarding differentiation for diverse learners. The study included both middle and high school SBAE teachers resulting in a case study highlighting secondary agriculture education program input. Both male and female SBAE teachers were contacted; only females responded and completed all case study requirements. Four high school SBAE teachers were interviewed as part of the study. Three of the four high school teachers have at least ten years of SBAE teaching experience. Two of the four high school SBAE teachers have earned a doctorate degree; two of the four high school SBAE teachers have earned a specialist degree. Three middle school SBAE teachers were interviewed as part of the study.

All three middle school teachers have less than ten years of SBAE teaching experience. Two of the three middle school SBAE teachers have earned a specialist degree; one middle school SBAE teacher has earned a masters degree. Approximately 51% of Georgia Agriculture Educators are female according to the Georgia FFA Teacher Directory (Georgia FFA & Agriculture Education, 2025). All findings in this study represent an all-female perspective.

Study participants' SBAE teaching experience aligns with the state averages; 57% of study participants have taught SBAE in Georgia less than ten years.

Case study participants were asked to share their highest degree level earned; participants primarily held higher academic degrees, specifically specialist and doctorate degrees. In Georgia, SBAE teachers receive extended day and extended year funding in addition to their base salary. Base salaries for SBAE teachers increase yearly based on number of years teaching agriculture (Georgia Department of Audits and Accounts, 2022). Education level determines a teacher's base salary (Georgia Department of Education, n.d.). SBAE teacher salaries in Georgia have the potential to substantially benefit from higher educational degrees plus years of teaching (Georgia Department of Audits and Accounts, 2022).

Objective 2: Determine the population of diverse learners in the sample School

Based Agricultural Education classroom population

Theme three states that Representation Matters. Students with diverse learning needs should be afforded the same opportunities that their general education counterparts have. All study participants reported that they did not use IEP or 504 documents to plan competition practices, although many teachers intentionally modify study material to best engage their students. Most teachers expressed that peer empathy must be engaged early in the semester for students of all abilities to succeed. Empowering both general education students and students who receive special education services to practice empathy with one another allows everyone to have an equal opportunity to learn.

Two teachers reported less than five documented IEP or 504 students in a single class. Two teachers reported their classes being labeled as inclusion classes – these sections include a majority IEP and 504 population and are intended to focus on the intentional engagement of a

mixed ability group. One teacher reported that a minimum two thirds of their class was documented IEP or 504 with additional supports needed for English Language Learners. Two teachers reported five to ten students with a documented IEP or 504 enrolled per section.

Objective 3: Identify SAE and CDE/LDE opportunities for diverse learners in the National FFA Organization

Theme two states Teacher Limitations and focused on training gaps for educators and Program of Work requirements. All certified teachers in Georgia who have completed a teacher preparation course through a Professional Standards Commission (PSC) recognized institution must complete various pedagogical and content specific courses before being awarded their certificate. Some education programs offer courses in special education or child psychology as an elective, but not as a mandatory course. Several participants noted the deficiency in Georgia SBAE with a lack of specific training and/or resources for teaching diverse learners.

Georgia SBAE teachers must satisfactorily complete a program of work (POW) each academic year. POW for middle school programs includes 47 standards while the high school program's POW includes 48. POW standards address SBAE program technology, budget, facilities, FFA activities at and above the chapter level, competition requirements, and classroom instructional requirements. In the last year, Georgia FFA has reinforced a policy that has the potential to negatively impact the inclusion of diverse learners in competitive FFA and SAE events. For the 2025/2026 academic year, to receive POW credit in CDE/LDE competitive events, individuals/teams must complete all aspects of the event, 4-person teams must have at least 3 members, and individuals/teams must score 30% of the top score for that event (C. Corzine, personal communication, October 17, 2025).

Georgia FFA offers a generalized accommodation statement for all competitive events. Only two teachers in the study have requested those services. The statement reads as follows. To report any special needs or request special services for a student to compete in a Career Development Event or FFA Award area (Area or State level), it is the responsibility of the FFA advisor to provide a detailed, specific request and explanation in writing. Requests would include written documentation from the school system verifying the IEP and need being requested. Written requests must be submitted to the CDE Superintendent prior to registering for the CDE/event (at least 3 weeks prior to the date of competition).

Article 2:

Objective 1: Determine the accessibility and accommodation of Career, Technical, and Agricultural Education specific facilities for diverse learners.

Theme one outlined the accessibility of SBAE programs. Accessibility of the SBAE program does not unilaterally fall on the SBAE teacher. Facility accessibility is the responsibility of the local school system to be ADA compliant for all disabilities to ensure fair and equitable use. Additionally, Program of Work standard 42 addresses the requirement for specialized facilities and their needs, which can be assumed to include ADA compliance (Georgia Agricultural Education, 2025). This standard is only met if the local system provides satisfactory completion.

Content modifications and setting consistent expectations, regardless of ability, are typically the responsibility of the SBAE teacher. Roberts and Harlin stated that knowledge is a byproduct of the project method (2007). In aligning with the FFA Motto, “learning to do, doing to learn,” educators are tasked with ensuring the SBAE is accessible for all students (National FFA Organization, n.d.).

Accessibility in Georgia SBAE can also include a larger target audience. Georgia's SBAE curriculum impact now includes the elementary level for students in kindergarten through fifth grade; with the passing of Senate Bill 330, Georgia piloted an elementary agriculture program focused on agriculture literacy and early introduction of agricultural concepts (Georgia Agricultural Education, 2025; Clemons et al., 2024; Clemons et al., 2018).

Objective 2: Identify project-based learning activities that engage diverse learners in a School Based Agricultural Education context

Theme two detailed how SAE is not a one size fits all program. To include every student in an SBAE program, SAE for All was created to provide access and opportunity to all students in work-based learning opportunities (SAE for All, n.d.). As a play on words, the theme *SAE for All or Nothing* represented the mixed opinions for SAE implementation in study participants programs. Some teachers modified their curriculum to only introduce SAE projects to older students in their program. Abilities and circumstances can dictate a student's SAE project options.

One teacher shared a whole group approach for diverse learners completing an SAE. At the beginning of the year, the SBAE teacher would design a agriculturally relevant field trip for the entire inclusion classroom roster so that all students who would be required to complete an SAE would have the opportunity for a hands-on project with instructor supervision and support.

Several case study participants provided out of the box examples for including diverse learners in agriculturally based SAEs. One teacher detailed two examples of SAE projects designed for two students with autism. One project focused on livestock animals with an additional artificial intelligence component; another project focused on using Minecraft as a

project implantation space and detailed modern farming practices to be completed within the gaming system.

Objective 3: Determine supports provided in the School Based Agricultural Education classroom/to the School Based Agricultural Education teacher for IEP learners

Theme three detailed the idea that skill development is more important than content mastery. Regardless of ability, all students have a right to learn, to be wholly and intentionally included, and have the right to interact with their peers and practice career skills. Lindner et al (2004) that students tended to have positive beliefs about science. In an SBAE program, all students have an opportunity to interact with agriculture if the SBAE teacher has modified appropriately. One teacher shared that fear could impede a student's learning opportunity, however, students must practice skills to become self-sufficient with limited supervision.

In addition to specific modifications, several teachers noted that most diverse learners simply need us to be patient in order for them to learn those target career skills. Scaffolding of materials or skill supports must be in place in the SBAE curriculum and facilities to fully support diverse learners. The final support shared by study participants was the use of the buddy system to provide scaffolded support under teacher supervision. Academic support in the form of a paraprofessional is not always available; three teachers shared that a paraprofessional is not a regular support they have. To fulfill the need for an immediate support system for diverse learners, study participants recommended intentional student pairings for scaffolded support.

Objective 4: Identify classroom management strategies benefitting IEP learners in the School Based Agricultural Education classroom

The fifth theme focused on behavior management in the SBAE program. Behavior management for a successful classroom environment is not a new concept. To allow students the freedom to learn, distractions must be limited. Classroom distractions can include undesired behaviors from irregulated students or stims of students with disabilities and ultimately promote stressful interactions. One strategy for limiting classroom distractions is implementing a constructive and welcoming environment. Teacher expectations of students can be the same across all ability levels, especially in consideration of respect for another person's wellbeing.

Article 3:

Objective 1: Determine School Based Agricultural Education teachers' experience when working with Alternative learners in a School Based Agricultural Education classroom

Theme two emphasized that SBAE is "heart" work. An educator that is supported with needed instructional resources, relevant professional development, and a positive working environment is likely to be more compassionate and supportive towards students with diverse learning needs (Jennings et al., 2013). Both students with disabilities and general education students can experience a lack of engagement in the classroom setting. This lack of student engagement has been linked to boredom, perceived irrelevance of the content taught, and/or social, emotional, mental, or physical barriers (Anderson, 2013).

All teachers involved in the study shared a personal connection and heart for teaching diverse learners. When students sense teachers care and support them, they are more likely to

engage positively in the academic environment, reinforcing the correlation between the teacher's love for the special population and the students' interest (van Uden et al., 2014).

Objective 2: Identify educational and preparation supports provided to School Based Agricultural Education teachers working with diverse learners

Theme one outlines how diverse learners are capable of more. Understanding that all students can be actively involved in the classroom environment and successful with the right supports is essential for students to succeed. Both veteran teachers shared strong opinions on involving all students in the curriculum fully regardless of student ability.

Some teachers provided scaffolded materials to students for success in hitting the intended learning target in a timely manner. Wayground, formerly Quizizz, was used primarily by one study participant. Wayground is an online resource for both instruction and review. This resource has numerous differentiation features that can be assigned on an individual basis to support students in the learning process. Wayground generates usable data that can be shared and reviewed amongst team teachers.

Most participants shared that training in diverse learner support and methods for modifying curriculum are not regular opportunities offered by their school districts. Only one teacher reported their system as providing any specialized accommodation or modification training. All participants noted that they had no memory of any differentiated instruction workshops or training seminars offered by the Georgia Vocational Agricultural Teachers Association.

Objective 3: Identify specific instructional strategies used to positively impact diverse learners in a School Based Agricultural Education classroom

All participants in the study shared how imperative the buddy system was to the success of the SBAE program. As class sizes continue to grow, behavior issues become harder to manage, it's essential that teachers find ways to be successful with the resources they already have. Using the buddy system allows for two-dimensional differentiation. Both the lower and higher performing students can be served. Specifically, higher performing students can serve as an academic support underneath the teacher.

Recommendations for Future Research

Article 1

The following recommendations are offered for future research. Investigate the success of SBAE curriculum resources prepared by the Georgia Department of Education compared to SBAE teacher-created curriculum resources, with specific attention to resources benefitting diverse learners. The current study focused on best practices for engaging diverse learners in the secondary SBAE program through the three-component model from exemplar SBAE teachers' perspective. Future research could showcase the benefits of certain differentiation tools and/or methods used in secondary SBAE.

A mentor program should be created to match teachers with at least ten years of SBAE teaching experience with a teacher with less than ten years of SBAE teaching experience. The mentorship would ideally offer support in all aspects of the three-component model and serve as a training effort. A successful mentorship should include a mentor teacher with proven success in differentiating the SBAE program and a desire to work with diverse learners as well as a mentee teacher with the desire to work with diverse learners. This recommendation is solely

based on the study participants desire to actively involve diverse learners in the 3-component model.

GVATA has placed a renewed importance on professional development for SBAE teachers in specialized areas. GVATA should host professional development on what tools SBAE teachers can have pre-made in your teacher toolbox to make teaching diverse learners easier. Including training on SBAE differentiation techniques through the standard requirement of professional development could result in a positive impact on Georgia's SBAE students. SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Stair, 2009; Ramage, 2021). Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010). Current research suggests that many SBAE perceive themselves as being unprepared for the inclusion of diverse learners in the three-component model in response to the increase population of diverse learners in the SBAE program (Stair et al., 2010).

Further research should be conducted on the impact of professional development for SBAE pre-service teachers specific to diverse learners. Little is known about whether professional development training on diverse learners could catalyze pre-service teachers' growth for overcoming challenges associated with diverse learners in the SBAE program (Ramage et al., 2021).

Since differentiation cannot be mass produced, the researcher recommends creating a state-wide resource sharing space specifically for SBAE curriculum pertaining to diverse

learners. Resources can be shared through the Georgia FFA Association website or through a community based social media page.

Further research should be conducted on the SBAE teacher's professional schedule in relation to student success. Diverse learners cannot be active participants in the total SBAE program and gain skills in the absence of the SBAE teacher.

Future research should be done to consider the SBAE program impact of SBAE teachers earning higher education degrees in Georgia. Are SBAE teachers with higher degrees more effective in operating the SBAE program? Is earning a higher education degrees a personal or professional motive?

Article 2

The researcher recommends that State SBAE staff or the local CTAE department conduct a needs assessment in ten years or less of all secondary SBAE programs to ensure ADA compliance of all SBAE facilities and tools. CTAE directors and school administration should be a regularly included partner in the local SBAE program.

A needs assessment should be conducted to determine which POW standards are necessary for program success and which could be cut to offer SBAE teachers more freedom to impact their own program. In the future, a request for an adjusted scale of standard completion is desired if diverse learners are involved in competitive events and score below the 30% standard cut off (C. Corzine, personal communication, October 17, 2025). Georgia Program of Work standards need to be reviewed to incorporate inclusion student participation.

Future research should be conducted in what types of students and at what rate are being placed into SBAE programs to ensure the SBAE teacher is being set up for success before program modifications are made. Independent variables to consider when successfully

incorporating diverse learners in the three-component model: teacher's age, years of teaching experience, interaction with diverse populations beyond the classroom, and the amount of preservice training and continued professional development pertaining to diverse learners (Johnson et al., 2012). Georgia's Department of Education should employ a special education curriculum director to address gaps in the SBAE curriculum for supporting diverse learners in project-based learning.

Georgia SBAE should create a spotlight teacher on the Georgia FFA website to share success stories of SBAE teachers differentiating their program.

SBAE teachers should utilize support groups as a mainline attempt at immediate inclusion. The relationship between parent, student, and teacher can also impact student's success in the classroom; if a parent or guardian has a negative connotation of the subject or instructor, a negative impact on the student's engagement or success could be noted (Schock & Jeon, 2023). Child development and education research state that parental support is a key factor in what and how a child learns (Miller et al., 2025).

Article 3

The following recommendations are offered for future research. Investigate the student experience with best practices for engagement in secondary SBAE for diverse learners. The current study focused on exemplar teachers who were well known to state SBAE staff for differentiation in their SBAE program.

Further in-depth teacher preparation training with special needs populations has the potential to foster personal connections between the SBAE teacher and special populations. Intentional collaboration between the SBAE teacher, Special Education representative, and

guardian is needed prior SBAE program involvement to address expectations and limitations on an individual student basis.

Student population can impact a teachers effectiveness score and should be documented. Teacher effectiveness assessments should include notation of special populations during evaluations to provide context.

Teachers should modify curriculum materials to only assess the targeted skill. When creating or modifying assignments, clarify what the goal of the activity is. If the goal is researching a topic and creating a PowerPoint, scaffold the PowerPoint presentation before assigning to students to create a streamlined effort.

GVATA should facilitate or host professional development twice a year in working with diverse learners in SBAE. SBAE instructors must be prepared through teacher preparation programs and provided with continual professional development opportunities to meet the needs of all students, particularly diverse learners, in SBAE classrooms (Stair, 2009; Ramage, 2021). Special education research in agricultural education has shown teachers often disagree that their teacher preparation training program was adequate to equip them for teaching students with special needs (Hoerst & Whittington, 2009; Stair et al., 2010)

Technology programs like Wayground should be implemented in the SBAE program to provide specific accommodations on digital assignments in addition to two-dimensional peer support for all program activities. Facilitating curriculum accommodations through digital assistive technology and peer support could positively benefit diverse learns in the secondary SBAE program.

Recommendations for Practice

Based on the literature review and exemplar descriptions, this study emphasized the need for identifying successful instructional strategies for Students with learning difficulties in Secondary SBAE in the three-component model. Gaps in current research involving diverse learners in the SBAE total program led to the following recommendations. AGED teacher preparation programs should include more diverse student preparation coursework, continued professional development for the SBAE teacher focused on inclusion of diverse learners, and general recommendations for the SBAE teacher.

Recommendations for Agricultural Education Teacher Preparation Programs

Participants in the study reported minimal coursework pertaining to diverse learners in their SBAE teacher preparation program. As the population of diverse learners increases, this study recommends that future coursework in SBAE teacher preparation programs involve working with diverse learners' populations as well as more than one mandatory exceptional learner course for certificate completion.

The literature review suggests that SBAE teacher's professional development needs differ based on their educational and demographic differences. Effective teacher preparation for working with diverse learners should include prior consideration of these differences.

Recommendations for Georgia SBAE State Staff and Association

A review of the SAE project's purpose and guidelines should be conducted to ensure alignment with current program standards and demographic shifts.

A review of the Program of Work standards to include differentiated language for special populations like diverse learners.

Study findings highlight a need for structured, continued professional education facilitated by the GVATA to promote annual training in working with diverse learners.

Recommendations for Professional Development in School Based Agricultural Education Teachers

Study findings and the literature review highlighted a gap in professional development for SBAE teachers specific to diverse learners. Continued education focused on the inclusion of diverse learners in the three-component model can effectively prepare SBAE teachers for creating an inclusive learning environment that allows all students regardless of ability the opportunity to interact and achieve SBAE program standards.

SBAE teachers who are alternatively certified in Georgia do not complete a traditional teacher preparation program. Professional development through the GVATA should be created to target alternatively certified SBAE to appropriately train teachers in general inclusion practices as well as offer specific differentiation techniques for the secondary SBAE classroom.

Recommendations for SBAE Teachers

Study findings suggest that SBAE teachers perceived as best in their field for including diverse learners in the three-component model all have a personal connection to the diverse learner population. SBAE teachers should seek out opportunities to work with diverse learners to promote an inclusive environment.

Differentiation cannot be mass produced. A public sharing space should be created for Georgia SBAE teachers to share differentiated curriculum materials and advice on best practices with specific diverse learner communities. This public space would act as immediate support for specialized curriculum questions during the SBAE program's current school term.

Positive behavior management and routine oriented classrooms contribute to the success of diverse populations.

Peer support systems can act as a first line of defense in modifying curriculum for diverse learners. Creating student support partnerships allows individuals to have a curriculum mentor.

SBAE teachers should consider modifying curriculum materials to reflect appropriate scaffolding. Materials should include necessarily templates to only test the target skill. For example: creating a PowerPoint for student research that includes pre labeled questions or prompts to ensure students are focused on targeted research and not how to use PowerPoint.

Findings suggest that assistive technology such as Wayground is beneficial in facilitating the three-component model in the SBAE program. Various accommodations can be assigned on an individual teacher basis and applied by shared teachers.

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Appendices

Appendix A: Interview Questions

Engaging Diverse Learners in School-Based Agricultural Education - Identifying Successful Instructional Strategies for Students with Learning Difficulties in School Based Agricultural Education

Proposed Interview Questions

1. How many years have you been teaching? Were they public or private schools?
2. What subjects and grade levels?
3. What is your level of education?
4. How many diverse learners do you teach in each of your classes?
5. How many general education students do you teach in each of your classes?
6. What is your confidence level in teaching diverse learners: not very confident, somewhat confident, extremely confident?
7. How do you include diverse learners in the FFA Organization on the local, state, and national level?
8. Do you differentiate CDE/LDE materials to accommodate diverse learners?
9. How do you include diverse learners in Supervised Agricultural Experience projects?
10. Do you create SAE plans with built in differentiation for home projects?
11. Do you create school-based SAE opportunities?
12. How do you address cognitive needs in your FFA and SAE programs?
13. How do you address social and emotional needs in your FFA and SAE programs?
14. How do you address physical needs in your FFA and SAE programs?
15. Other agricultural teachers and leaders identified you as someone who excels in educating diverse learners. Why do you think that is?
16. What is your teaching philosophy/Why did you want to teach agricultural education?
17. How are diverse learners involved in the care of specialized facilities?
18. What specialized facilities does your program have access to?
19. What modifications are made in your classroom/lab/shop?
20. What tools are used in your class/lab/shop?
21. What programs are used in your X?
22. What is your classroom culture like?
23. What professional development have you completed pertaining to teaching diverse learners?
24. Have you used that training in your SBAE program?
25. What training do you think would be effective in educating teachers on how to teach diverse learners?
26. What curriculum do you use to teach each of your agricultural classes?
27. How long have you used that curriculum?
28. Are modifications for diverse learners made to the curriculum by the special education team/instructional coach/ag teacher/etc?
29. What modifications have you found to be successful in teaching diverse learners in the SBAE classroom?
30. How do you ensure both general education students and diverse learners are afforded opportunities to work in a group setting?
31. In what ways does the special education teacher (case manager or lead SPED teacher) support your content specifically in modifying for diverse learners?
32. How is your classroom culture different based on the population? Specifically, how do the general education students view and/or interact with diverse learners?
33. What are your consistent classroom routines?
34. What is your classroom structure like for each grade level that you teach?
35. Are there any differences in your routines or structure with the presence of diverse learners?

36. Other agricultural teachers and leaders identified you as someone who excels in educating diverse learners. Why do you think that is?

Appendix B: Organization of Instrument Questions according to SCT, CoI, and Three-Component Model

Three-Circle Component	COI Model	Base Interview Question	Possible Probing Questions
Class & Lab	Teaching	How many years have you been teaching?	
Class & Lab	Teaching	Were they public or private schools?	
Class & Lab	Teaching	What subjects and grade levels?	
Class & Lab	Teaching	What is your level of education?	
Class & Lab	Teaching	What is your level of education?	
Class & Lab	Teaching	How many diverse learners do you teach in each of your classes?	
Class & Lab	Teaching	What is your teaching philosophy?	Why did you want to teach agricultural education?
			Other agricultural teachers and leaders identified you as someone who excels in educating diverse learners. Why do you think that is?
FFA	Social	How do you include diverse learners in the FFA Organization on the local, state, and national level?	
FFA	Social	Do you differentiate CDE/LDE materials to accommodate diverse learners?	
SAE	Cognitive	How do you include diverse learners in Supervised Agricultural Experience projects?	
SAE	Cognitive	Do you create school-based SAE opportunities?	

SAE	Cognitive	How are diverse learners involved in the care of specialized facilities?	
SAE	Cognitive	What specialized facilities does your program have access to?	
Class & Lab	Teaching	What modifications are made in your classroom/lab/shop?	
Class & Lab	Teaching	What tools are used in your class/lab/shop?	
Class & Lab	Teaching	What professional development have you completed pertaining to teaching diverse learners?	What is your confidence level in teaching diverse learners: not very confident, somewhat confident, extremely confident?
			What training do you think would be effective in educating teachers on how to teach diverse learners?
Class & Lab	Teaching	What curriculum do you use to teach each of your agricultural classes?	
Class & Lab	Teaching	Are modifications for diverse learners made to the curriculum by the special education team/instructional coach/ag teacher/etc?	
Class & Lab	Teaching	What modifications have you found to be successful in teaching diverse learners in the SBAE classroom?	
FFA	Social	How do you ensure both general education students and diverse learners are afforded opportunities to work in a group setting?	What is your classroom culture like?

SAE	Cognitive	In what ways does the special education teacher (case manager or lead SPED teacher) support your content specifically in modifying for diverse learners?	
FFA	Social	How is your classroom culture different based on the population?	Specifically, how do the general education students view and/or interact with diverse learners?
Class & Lab	Teaching	Are there any differences in your routines or structure with the presence of diverse learners?	What is your classroom structure like for each grade level that you teach?

Appendix C: IRB Approval



EXEMPT DETERMINATION

July 18, 2025

Jillian Ford
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Dear Jillian Ford:

On 7/18/2025, the IRB reviewed the following submission:

Protocol Information	Submission Details
Type of Review:	Initial Study
Title:	Engaging Diverse Learners in School-Based Agricultural Education - Identifying Successful Instructional Strategies for Students with Learning Difficulties in School Based Agricultural Education
Investigator:	Jillian Ford
IRB ID:	STUDY00000605
Funding:	None
Grant Title:	N/A
Grant ID:	None
IND, IDE or HDE:	None
Documents Reviewed:	<ul style="list-style-type: none"> • A. Harrington Mack_Research Protocol_June 2025.pdf, Category: IRB Protocol; • Confirmation Email_Harrington Mack_Dissertation.pdf, Category: Recruitment Materials; • Information Letter_Harrington Mack_Dissertation_Updated July 18.pdf, Category: Consent Form; • Interview Questions_Harrington Mack.docx, Category: Script; • Recruitment Email_Harrington Mack_Dissertation.pdf, Category: Recruitment Materials;

The IRB determined that this protocol meets the criteria for exemption from IRB review. This determination is valid through 7/18/2028. The IRB has implemented a three-year determination period for Exempt submissions to better manage the active research portfolio.

In conducting this protocol you are required to follow the requirements listed in HRP-103 - INVESTIGATOR MANUAL.



This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a modification in the Endeavor system.

Sincerely,
IRB Administration
540 Devall Drive
Auburn, AL 36849
irbadmin@auburn.edu
(334) 844-5966

Appendix D: Recruitment Materials



Recruitment Email | Initial

Dear Participant,

The Auburn Curriculum and Teaching Department is seeking your participation in a research study focused on identifying best practices for including diverse learners in the agricultural education classroom. To participate, you must agree to be in the study and be a current Georgia agricultural education teacher. Ideally, at least five years teaching experience in the agricultural education field is preferred. You were identified as a potential case study participant by Georgia's state agricultural education staff.

The purpose of this study is to build a case identifying best practices for differentiating agricultural classroom instruction, FFA organization participation, and SAE programs. The results of this case study will be shared in leading journals in the field of Agricultural Education, Leadership, and Communication.

Participation in this study involves completing a Zoom interview (minimum of 30 minutes).

For more information about this study, please contact the principal investigator, Jillian Ford via email at jcf0088@auburn.edu or PhD Candidate, Ami Harrington Mack via email at ash0107@auburn.edu.

Thank you,

Ami Harrington Mack
PhD Candidate
Auburn University

Study Title: *Engaging Diverse Learners in School-Based Agricultural Education - Identifying Successful Instructional Strategies for Students with Learning Difficulties in School Based Agricultural Education*



Confirmation Email

Dear (participant),

Thank you for your willingness to participate in a case study on identifying best practices for including diverse learners in the agricultural education classroom through Auburn University's Department of Curriculum and Teaching. The purpose of this study is to build a case identifying best practices for differentiating agricultural classroom instruction, FFA organization participation, and SAE programs. The results of this case study will be shared in leading journals in the field of Agricultural Education, Leadership, and Communication.

Attached you will find a copy of the initial information letter as notice of consent.

Please use the following link to select a date and time for your interview. The Zoom link will be embedded in the calendar sign up.

[Calendar Sign Up Link]

For more information about this study, or if you need to reschedule, please contact the principal investigator, Jillian Ford via email at jcf0088@auburn.edu or PhD Candidate, Ami Harrington Mack via email at ash0107@auburn.edu.

Thank you,

Ami Harrington Mack
PhD Candidate
Auburn University

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