

University of Kentucky

UKnowledge

Theses and Dissertations--Community &
Leadership Development

Community & Leadership Development

2024

AUTISM IN AGRICULTURAL EDUCATION: A CASE STUDY OF AN ADOLESCENT WITH AUTISM SPECTRUM DISORDER AND THEIR PARENT ON CAREER AND TECHNICAL EDUCATION

Grace Miller

University of Kentucky, millhouzer7@icloud.com

Author ORCID Identifier:

 <https://orcid.org/0009-0005-1669-2819>

Digital Object Identifier: <https://doi.org/10.13023/etd.2024.170>

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

Recommended Citation

Miller, Grace, "AUTISM IN AGRICULTURAL EDUCATION: A CASE STUDY OF AN ADOLESCENT WITH AUTISM SPECTRUM DISORDER AND THEIR PARENT ON CAREER AND TECHNICAL EDUCATION" (2024).

Theses and Dissertations--Community & Leadership Development. 68.

https://uknowledge.uky.edu/cld_etds/68

This Master's Thesis is brought to you for free and open access by the Community & Leadership Development at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Community & Leadership Development by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Grace Miller, Student

Dr. Rebekah Epps, Major Professor

Dr. Rebekah Epps, Director of Graduate Studies

AUTISM IN AGRICULTURAL EDUCATION:
A CASE STUDY OF AN ADOLESCENT WITH AUTISM SPECTRUM DISORDER
AND THEIR PARENT ON CAREER AND TECHNICAL EDUCATION

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in Community and Leadership
Development in the
Martin-Gatton College of Agriculture, Food and Environment
at the University of Kentucky

By

Grace Charlene Miller

Lexington, Kentucky

Director: Dr. Rebekah Epps, Professor of Agricultural Education

Lexington, Kentucky

2024

Copyright © Grace Charlene Miller 2024

<https://orcid.org/0009-0005-1669-2819>

ABSTRACT OF THESIS

AUTISM IN AGRICULTURAL EDUCATION: A CASE STUDY OF AN ADOLESCENT WITH AUTISM SPECTRUM DISORDER AND THEIR PARENT ON CAREER AND TECHNICAL EDUCATION

Autism spectrum disorder (ASD) is a unique and often misunderstood diagnosis. Little is known about the experiences of adolescents with ASD. As students with ASD graduate high school, many are under- and unemployed. Career and technical education (CTE) in U.S. schools is intended to prepare all students for careers post-secondary. Agricultural education is one of the predominate career clusters within CTE. This qualitative single case study sought to create a platform for both a student and their parent to share their experiences in agricultural education and CTE. Participants were an adolescent with ASD who had taken at least one year of agriculture education courses and their parent. Findings reveal the meaningful nature of agriculture education courses and the relationship student and parent have with the agriculture teacher. Recommendations from this study include an increase in qualitative studies about ASD in agriculture education, improved education for teachers regarding ASD, and ways to improve upon student-parent-researcher interviews.

Keywords: Agricultural Education, Autism Spectrum Disorder (ASD), Career and Technical Education (CTE), Critical Disability Theory (CDT), Neurodivergent (ND)

Grace Charlene Miller
(Name of Student)

04/12/2024
Date

AUTISM IN AGRICULTURAL EDUCATION:
A CASE STUDY OF AN ADOLESCENT WITH AUTISM SPECTRUM DISORDER
AND THEIR PARENT ON CAREER AND TECHNICAL EDUCATION

By
Grace Charlene Miller

Dr. Rebekah Epps

Director of Thesis

Dr. Rebekah Epps

Director of Graduate Studies

04/12/2024

Date

To John, Logan, and Mason, for sowing seeds.

ACKNOWLEDGMENTS

As Captain William Clark wrote in his November 7th, 1805, Corps of Discovery field journal entry, “Ocian in view! O! the joy!!” At the threat of being *too* hyperbolic, I find Captain Clark’s exclamation a good fit for my own feelings toward completing both this thesis and my master’s studies: “*Degree in view!* Oh, the joy!!”

Acknowledgements are for the privilege of addressing one’s indebtedness; *acceptum*, or to be indebted to one. There are many people to whom I am indebted. For helping me pilot this ship safely to port, my committee chair, Dr. Rebekah Epps. For their empathetical guidance and advice, my two additional committee members, Drs. Nicole Breazeale and Patricia Dyk. To Dee Blakemore, for her unnamed membership and always appreciated championing. The CLD folks—professors, staff, and graduate students—who made working in our concrete bunker a pleasure. Also, to the folks back home—thank you for loving me.

It is a special privilege to find oneself surrounded and counseled by wise teachers. To the educators, both in spirit and vocation, who helped me get to this crossing, thank you! Several deserve special recognition: Mr. Bruce Blakemore, Pastor Nolan Carrier, Mrs. Angelique Hamilton, Mr. Dexter Knight, Dr. Rebecca Mott, Mrs. Courtney Pybas, and Dr. John Tummons.

Finally, I would like to thank the participants in this study. Though their identities remain anonymous for confidentiality reasons, my time spent with them holds no ambiguity. The January day blanketed in snow we all spent together is warm and vivid in my memories.

TABLE OF CONTENTS

TITLE	i
ABSTRACT OF THESIS	ii
ACKNOWLEDGMENTS	v
CHAPTER 1. INTRODUCTION	1
<i>Introduction</i>	1
<i>Recent Studies</i>	4
<i>Deficiencies in Studies</i>	4
<i>Purpose of the Study</i>	5
<i>Purpose Statement</i>	6
<i>Theoretical Framework</i>	6
<i>Limitations</i>	7
<i>Definitions of Terms</i>	7
CHAPTER 2. LITERATURE REVIEW	10
<i>Introduction</i>	10
<i>Autism Spectrum Disorder (ASD)</i>	10
<i>Signs, Symptoms, & Causes</i>	11
<i>Interventions</i>	12
<i>Perceptions</i>	13
<i>Experiential Education</i>	13
<i>Career and Technical Education (CTE)</i>	14
<i>Science, Technology, Engineering, & Mathematics (STEM)</i>	15
<i>Least Restrictive Environment (LRE)</i>	16
<i>Agricultural Education</i>	17
<i>School-Family Partnerships</i>	18
<i>Teacher Perceptions</i>	19
<i>Parent/Guardian Perceptions</i>	20
<i>Critical Disability Theory</i>	21
<i>Conclusion</i>	21
<i>Research Questions</i>	22

CHAPTER 3. METHODS	24
<i>Characteristics of Qualitative Research</i>	24
<i>Qualitative Study</i>	24
<i>Limitations</i>	25
<i>Researcher’s Role and Reflexivity</i>	26
<i>Data Collection Procedure</i>	27
<i>Participants</i>	27
<i>Data Recording Procedure</i>	28
<i>Data Analysis and Interpretation</i>	29
<i>Trustworthiness</i>	30
CHAPTER 4. FINDINGS.....	31
<i>Overview</i>	31
<i>Research Question One Findings: Agricultural Education is Meaningful for Student</i>	32
<i>Work in Ag Class is Meaningful</i>	32
<i>Relationship with Ag Teacher is Meaningful</i>	34
<i>Research Question Two Findings: Agricultural Education is Meaningful for Parent.</i>	37
<i>Work in Ag Class is Meaningful for Student</i>	37
<i>Relationship with Ag Teacher is Meaningful for Student and Parent</i>	42
<i>Summary of Findings</i>	45
CHAPTER 5. CONCLUSIONS	47
<i>Restatement of Research Problem</i>	47
<i>Discussion</i>	47
<i>Research Question One Discussion</i>	48
<i>Research Question Two Discussion</i>	50
<i>Recommendations for Future Research</i>	54
<i>Final Words</i>	58
APPENDICES	60
<i>Appendix A – IRB Approval</i>	60
<i>Appendix B – Interview Questions</i>	61
<i>Appendix C – Student Interview Codes</i>	62

<i>Appendix D – Parent Interview Codes</i>	63
REFERENCES	66
VITA.....	78

CHAPTER 1. INTRODUCTION

Introduction

In the United States of America, 12.5 million secondary and post-secondary students are enrolled in Career and Technical Education (CTE) courses (Advance CTE, 2023). Students in CTE courses are trained in academic and industrial skills for future education and/or the workforce (Advance CTE, 2023). CTE classrooms are either integrated into the main school complex or are separate, off-site complexes for the school district's students. In some CTE programs, a centralized CTE school could also be a 'satellite' school for students from multiple schools and/or communities to attend for parts of the school day. CTE courses are elective courses offered for students to take in addition to their core classes. CTE courses offered may include, but are not limited to, agriculture, accounting, automotive, carpentry, culinary arts, engineering, marketing, or masonry.

Courses are grouped into career clusters which are centered around different vocations in various industries. Within those clusters are the individual pathways or courses which prepare students to meet the industry standards connected to the content. For example, in the career cluster of architecture and construction, one pathway is the design/pre-construction pathway, taught to meet the skills and knowledge required to begin in the vocation. Across 16 career clusters and 79 career pathways, courses provide content and experiences made to replicate skills and standards students would need in a particular field (Advance CTE, 2023). Course work is structured to be both kinetically and cognitively engaging; classes are seen as "hands-on" and "minds-on."

These elective courses draw students of all genders, socio-economic, cultural, and cognitive statuses. This includes students with autism spectrum disorder (ASD). ASD is

defined as neurodevelopment disorders which affect how individuals behave, communicate, socially engage, and learn (National Institute of Neurological Disorders and Stroke, 2023). Within the spectrum of ASD, students can exhibit varying intellectual development, communication abilities, physical and/or kinetic abilities, behavioral challenges, emotional challenges, and social abilities (Boutot, 2017). What ASD looks like in a person is highly unique to the individual, with no two autistics being the same. That said, some identifying markers for adolescents with ASD could be difficulty engaging and maintaining a conversation or social interaction with peers, delayed or absence of language, restricted interests (RI), repetitive behavior, hyperactivity, impulsivity, or inattentive actions (Centers for Disease Control and Prevention, 2022). Communication and social barriers are two of the biggest struggles for youth with ASD. Students may struggle with understanding nonverbal cues (facial movements or gestures), expressing needs to peers or instructors, and understanding verbal dialogue (Boutot, 2017; Hurlbutt & Chalmers, 2004; Sung et al., 2019).

Because of the connections with delays or deficits in behavioral, emotional, physical, or intellectual skills in connection with an ASD diagnosis, behavioral interventions serve as the main method for improving deficits and integrating students into neurotypical classrooms. As health professionals have become better at diagnosing and providing children with behavioral interventions, the number of students with ASD in public schools each year has increased (McKenney et al., 2016). Annually in the United States, 50,000 adolescents diagnosed with ASD will turn 18-years-old (Sung et al., 2019). Individuals with ASD are more likely to be underemployed (i.e., lower wages,

less hours, etc.) and unemployed than their neurotypical peers without ASD (Cherlyan et al., 2021; Hillman et al., 2021).

These emerging adults are being left behind by the job market. If secondary students with ASD are not given opportunities to learn skills in order to earn a full, competitive wage, educators and school administrators across the U.S. are failing this student population. This affects not only the individuals with ASD and their friends, family, and caregivers; but the larger communities and municipalities where autistic people live. With the cause of ASD unknown and a probability of having ASD not subject to any state, rural or urban area, or socioeconomic status, this population exists and lives in every community across the United States of America. As a population often under- or unemployed, this means the general taxpayer, as well as parents or caregivers, are financially responsible for this growing population. Employment, especially full-time employment, has been found to increase, “independence, contribution to society, and quality of life” (Nasamran et al., 2017, p. 344). If secondary schools are to better prepare *all* students—including those with ASD—for gainful employment, the current situation must be improved. CTE can have a big role to play in this.

Students, regardless of neurodevelopment, have the potential to benefit from career-based instruction. Skills necessary to find and maintain post-secondary employments are available through CTE. Those who struggle in a “traditional” class setting have been directed toward the more “hands-on”, experiential approach of CTE courses. This includes students with special needs, like ASD. Courses acknowledge students learn uniquely to their own experiences, and the path each student takes in experiential education is based on their own interests and capabilities (Hickcox, 2002).

Recent Studies

Educators have recognized in the last decade a shift in their classrooms. As school districts emphasize career-ready coursework, not only has the number of students in CTE increased, but the number of students with special needs in CTE classes has increased (Stair et al., 2016). CTE courses have the potential to, "engage students more thoroughly in school and create a more tangible connection between schoolwork and postsecondary experiences" (Gottfried & Plasman, 2018, p. 327). While CTE courses are geared for career readiness, individuals with special needs experience barriers to full-time employment. A possible explanation of this is CTE instruction may not be providing neurodivergent students with the opportunities, environments, and skill training to improve their employability.

In two different studies, researchers found less than 15 percent of young adults with ASD were earning a wage post-high school (Fong et al., 2021; Hong et al., 2017). This gap comes partly from different developmental stages and independent behaviors in emerging adults with ASD. Though studies have addressed the role of CTE and CTE coursework with students with ASD, a deficit persists in research for this population. Adolescents with ASD need to be given the platform for sharing their perceptions on education, CTE, and experiences as emerging adults on the spectrum.

Deficiencies in Studies

Much of the current literature is focused on interventions and behavioral strategies for early childhood and elementary-aged children. Since diagnoses generally occur around the age of seven, research is focused on the age groups of individuals who require the most intervention and skill acquisition (Blenner et al., 2011). Since this is still an

emerging population for study, groups such as adolescents, emerging adults, and adults, are typically studied less. As of 2017, only one percent of all ASD-related research with federal funding is connected to participants entering adulthood or aging (Weitlauf et al., 2017).

There is very little research on the experiences students with ASD have in experiential based, CTE courses. A possible explanation is the same for why there is a general deficit in any research with adolescents with ASD: this is a population still emerging in professionals' and educators' understanding. Previous research has predominately, yet not exclusively, used quantitative methods. As a population characterized by their social skill challenges, the stories and experiences of people with ASD have not been fully explored.

Purpose of the Study

Professionals working with individuals with ASD are constantly learning new aspects of what it means to have ASD. To this day, very little is truly known about ASD—why it occurs, why it looks different on each person, or how to address it. The aim of this research was to increase the level of knowledge for professionals concerning the experiences of a high school student with ASD. This study aimed to give voice to a student who is not always able to communicate their emotions to loved-ones, teachers, friends, or peers. The goal was not only to add to the emerging research of adolescents with ASD but collect the stories of a student and their parent; to better understand an adolescent with ASD and the narrative of their life at home and school. Stories which may have the potential to shift how educators, administrators, and other professionals view and work in a classroom or laboratory environment with students with ASD.

Purpose Statement

The purpose of this case study was to collect and interpret the experiences of an adolescent student with autism spectrum disorder (ASD) in relation to their enrollment in a specific career and technical course: agriculture education. This study also collected and interpreted the experiences of the parent of the participant, regarding their student's enrollment in agriculture education. This study aimed to provide a platform for an adolescent with ASD and their parent to share their stories and perspectives of agriculture education. Participants were identified by contacting agriculture education teachers and requesting they identify possible participants. The adolescent participant is a current high school student with ASD who had taken at least one full year of an agriculture education, CTE course in the Commonwealth of Kentucky.

Theoretical Framework

Critical theory seeks to create understanding through the “in-depth analysis of the structural and as yet incompletely understood psychic underpinnings of oppression” (Burghardt, 2011, as cited in Hall, 2019, p. 3). Critical theory scrutinizes the social, cultural, or political status quo weaved into society's fabric. A division of critical theory, Critical Disability Theory (CDT) challenges the interpretation of the role of disability and impairment in society. CDT has four core tenets to its framework: Quantitative methods are insufficient for analyzing a phenomenon, necessitating the need for theory; CDT acknowledges the need for individuals to transcend oppression; analysis is relative to the location and historical perspectives of the modern day; and a focus on human rights and personal agency allows individuals with disabilities to not only be representatives but active members in the direction of discourse (Meekosha & Shuttleworth, 2009).

CDT analyzes, “disability as a cultural, historical, relative, social, and political phenomenon” (Hall, 2019, p. 1). With the Individuals with Disabilities Education Act (2004), federal law formalized the rights of students with special needs or disabilities in U.S. schools. According to the Centers for Disease Control and Prevention (2020), a disability is an impairment which limits certain activities or restricts participation. For students, this could include disabilities affecting vision, emotional or mental health, movement, socializing, thinking, recollecting, learning, communicating, or hearing. Students with an ASD diagnosis are included under the protection of IDEA and are among the 7.5 million students with disabilities in the U.S. today (U.S. Department of Education, 2024).

Limitations

The research focuses on the experiences of an adolescent with ASD and their parent. The study is specific to agricultural education classrooms in the Commonwealth of Kentucky. Any results and implications are derived from the individual and the unique experiences of the participants. Participants’ experiences may not be congruent with the experiences of other individuals who have ASD or the experiences of their parents. It is discouraged to generalize findings to other populations with disabilities or in other states.

Definitions of Terms

The following are terms and definitions relevant to the research study. These terms are important for understanding the context of both the academic literature and the experiences of participants.

Adolescents- Individuals between the ages of 10 and 19 (World Health Organization, n.d.).

Agricultural Education- A school-based, CTE pathway incorporating classroom instruction in agriculture, food, and natural resources, experiential learning, and leadership education (National Association of Agricultural Educators, n.d.).

Autism Spectrum Disorder- Across a wide spectrum of characteristics and symptoms, a disability impacting an individual's development of social, verbal, or nonverbal skills (Boutot, 2017; Ramage, 2021).

Career and Technical Education- Secondary courses focused on career-readiness, which teach students academic and technical skills through industry-based learning standards (Advance CTE, 2023).

Disability- Any physical, cognitive, or emotional impairment which challenges daily functions in one or more ways for an individual (Americans with Disabilities Act, 1990).

Experiential Education- A methodological approach to education where learning and skill acquisitions are centered around building on old experiences and gaining new ones (Crosby, 1981).

FFA- Formerly known as the Future Farmers of America, now the National FFA Organization; an agriculture education-based leadership organization for youth (Barajas, 2021; National FFA Organization, n.d.).

Individualized Education Plan- Continually changing document created at school to allow for better suited instruction, goal creation, and evaluation practices for students with disabilities (IDEA, 2004; Ramage, 2021).

Least Restrictive Environment- Instructional method where a student with disabilities is in the same classroom as those with no disabilities as much as is academically able and responsible (Fleischer & Zames, 2011).

Neurodivergent- A term for describing those whose brain has developed or operates in a different, unique way; a way of describing those with ASD (Baumer & Frueh, 2021).

Neurotypical- A term for describing those without neurodivergence and possessing a typically developed brain and cognition (Bos & Stokes, 2018).

CHAPTER 2. LITERATURE REVIEW

Introduction

In the past ten years, over 500,000 adolescents with autism spectrum disorder (ASD) have exited our school systems in the United States (Roux et al., 2017; US Government Accountability Office, 2016). Each year, an estimate of 50,000 adolescents with ASD will turn 18-years-old (Grandin & Moore, 2022; Shattuck et al., 2012). The number of students with ASD in U.S. public schools only increases as health and school professionals become better at detecting and diagnosing children (McKenney et al., 2016). Emerging adults with ASD face numerous challenges in comparison to their neurotypical (NT) counterparts. Due to the nature of ASD, social and behavioral challenges inhibit individuals from joining the post-secondary world as easily as NT peers. For students with ASD in experiential education courses and coursework, this instruction has the potential to, "engage students more thoroughly in school and create a more tangible connection between schoolwork and postsecondary experiences" (Stone & Alfeld, 2004, as cited in Gottfried & Plasman, 2018, p. 327). The following will detail general information on ASD, what part experiential education may play in better preparing adolescents with ASD, and how school-family partnerships in experiential education can provide adolescents with the skill sets to succeed in life post-secondary.

Autism Spectrum Disorder (ASD)

Autism spectrum disorder (ASD) is defined as neurodevelopment disorders which affect how individuals behave, communicate, socially engage, and learn (National Institute of Neurological Disorders and Stroke, 2023). The most challenging aspect about ASD is it is a spectrum; there are wide, varying looks, diagnoses, and characteristics,

which are unique to each individual. A long-misunderstood disorder, ASD as of today consists of three subsections in the spectrum: Asperger syndrome, childhood disintegrative disorder, and pervasive developmental disorders not otherwise specified (PDD-NOS) (Blenner et al., 2011; National Institute of Neurological Disorders and Stroke, 2023). Children can be diagnosed as early as 18-to-24 months, but since diagnosis is based on developmental deficits (which can be difficult to detect if one does not know what to look for), most diagnoses commonly occur during elementary school years; the average age of diagnosis for Asperger's is 7.2 years (Blenner et al., 2011).

Signs, Symptoms, & Causes

Common indicators of ASD include avoiding eye contact, difficulty showing emotion, or shying away from communication or interactions; delays or inability to speak, little voice inflection, or missing non-verbal cues; difficulty imagining in school or play, hyper fixation on a topic or restricted interests (RIs), twirling or other repetitive tendencies, anxiety or stress, unusual sleeping patterns, etc. (Centers for Disease Control and Prevention, 2022; National Institute of Neurological Disorders and Stroke, 2023). Males are four-times more likely to be diagnosed with ASD, and intellectual disabilities often accompany a diagnosis one-third of the time (Centers for Disease Control and Prevention, 2022). As individuals advance into high school and adolescent years, signs and symptoms may persist or lessen based on the intervention given earlier in the child's life. There is no known cause for ASD or why individuals present the symptoms they do.

The cause or causes of ASD are still unknown. Some researchers hypothesize it is a mixture of predominately genetic predisposition in families and some environmental factors (Savino et al., 2020). The U.S. Department of Health and Human Services has

reported a deficit in federally funded research related to ASD, with ASD-related work only comprising one percent of allocated funds in emerging adult and adult studies (Weitlauf et al., 2017). As of 2022, an estimated two percent of the U.S. population have autism (Lee et al., 2022). To date, there is no cure. The only “cures” for ASD are the interventions created to reduce and aid individuals with their symptoms (Standifer, 2009).

Interventions

Interventions can begin as early as two years of age, following a person throughout their entire adult life. As emerging adults soon to join the post-secondary world, much of the current research for adolescents with ASD is in social and behavioral skills interventions. People with ASD generally have poor social skills in comparison to their neurotypical (NT) peers (Biagianni et al., 2020; Bos & Stokes, 2018; Ke et al., 2018; Levy & Dunsmuir, 2020; Sung et al., 2019). Interacting casually or in a work setting, asking for assistance or accommodations, acknowledging or understanding another’s emotions, are all challenges for people with ASD. Most of the current intervention types focus on empirical, single-case studies in social skill and knowledge, participation, and interactions with fellow peers (Ke et al., 2018).

Researchers in Australia have found connections in a small study trial with interventions in empathy and improved personal wellbeing in adolescents with high-functioning ASD. This behavioral intervention surveyed cognitive empathy, to “mentally understand another person’s emotional experience,” as a developmental trait of participants (Bos & Stokes, 2018, p. 434). Just as one with ASD struggles to empathize and assess another’s emotions, the same can be true for recognizing and understanding emotions in themselves. As a community of people who either are non-verbal or, if

verbal, struggle to understand and articulate their lived experiences, perceptions of people with ASD are valuable insights to how their unique minds work.

Perceptions

Cognitive differences in people with ASD can, with the right guidance, be used as great assets. In Naoki Higashida's, *The Reason I Jump*, he describes, as a thirteen-year-old boy with ASD, the most beautiful part about his autism is how he sees things. "...Details jump straight out at us... and then only gradually, detail by detail, does the whole image sort of float up into focus. [...] Every single thing has its own unique beauty" (Higashida, 2013, p. 59-60). Dr. Temple Grandin and Higashida both cite their autism, their ability to see things in a different way, as a reason they can take great pleasure in the natural world and animal kingdom (Higashida, 2013; King, 2022). Dr. Grandin has long said for her, as a person with autism, the greatest advantage of ASD is thinking in pictures (King, 2022). For Grandin, she can see the world as a cow or a horse sees it—shadows and noises, colors and patterns. There are advantages to ASD. The challenge for caregivers and educators is how to understand and use the uniqueness of ASD.

Experiential Education

Considered by many as the father of experiential education, John Dewey, believed students have prior experiences they bring with them to the classroom. In the classroom or laboratory, those experiences are advanced upon through instruction and action. New experiences are presented, the new and old combining to build off one another. All the time, external and internal conditions are placed on students, leading to growth and students' ability to achieve new experiences (Dewey, 1938). The goal of experiential

education is not merely to complete an objective; rather, to develop those skills, based in experience, which teach students to understand and use their experiences to greater purposes in the future (Crosby, 1981). For students with ASD, experiential education may be the greatest skill training they receive in their education.

One of the most important pieces teachers need to utilize in working with adolescents with ASD is using their restricted interests (RIs) to the students' advantage. RIs are unique to each individual, but generally are objects or topics on which the person has an obsession or hyper fixation. Teachers integrating RIs found positive results of students with ASD, "demonstrating positive gains in motivation, task engagement, task performance, as well as social engagement, social skill, confidence, and emotional well-being" (Gunn & Delafield-Butt, 2016, p. 417). Experiential education is intended to be, "emotionally engaged learning" (Warren et al., 2008, p. 9). Combining student interests and past experiences, students with ASD have been found to be more engaged, more often on task, and more interactive (Bernadkin, 2018). Career and technical education (CTE) courses acknowledge students learn uniquely to their own experiences, and the path each will take in experiential education is based on their own capabilities (Hickcox, 2002).

Career and Technical Education (CTE)

Of the 8.8 million secondary students in career and technical education, 10 percent of students have a disability (Advance CTE, 2020). Though the exact number is unknown, students with ASD are included within the 10 percent of students with disabilities in CTE. The average public school in America is inadequately addressing the needs of adolescents with ASD (Hume et al., 2022). One direct way students are being

served inadequately is in life skills preparation. Responses from young adults with ASD in one study showed 80 percent of participants did not live independently (i.e., still lived at home). Of that same group, only six percent had at least a part-time job (Hong et al., 2017). The average education and interventions students with ASD have and are receiving are falling short of preparing them for careers and independent living. CTE courses, with the correct management, may help prepare adolescents with ASD for success in their post-secondary lives.

In the United States, CTE courses are designed to prepare students with the skills necessary for success post-secondary. Driving principles of national CTE organizers are (1) introducing students to career-based proficiencies, (2) training students in career-based skills, and (3) providing this education in an equitable and accessible way (Advance CTE, 2023). Hands-on training, with minds-on retention of knowledge and skills, are core standards for all CTE courses. Instruction based in science, technology, engineering, and mathematics (STEM) is how many teachers see their classrooms as both hands-on and minds-on.

Science, Technology, Engineering, & Mathematics (STEM)

Just as Dr. Grandin cited her autism as a positive part in her life, research has shown students with ASD do well with instruction in science, technology, engineering, and mathematics (STEM). Students benefit from STEM in teaching variety, opportunities to use their neurodiversity to their advantage, practicing problem-solving and other positive life-based skills, and readying themselves for the workforce (Gobbo et al., 2018). Adults with ASD, regardless of their position on the spectrum or cognitive abilities, are more likely to be under-employed (i.e., part-time, lower wages, etc.) and unemployed in

comparison to neurotypical (NT) peers (Hillman et al., 2021; Hurlbutt & Chalmers, 2004; Wei et al., 2018). Due to the more “hands-on” approach of STEM work, students with ASD in one study increased problem-solving skills through math word problems. This provided problem-solving skills necessary for gaining and maintaining employment. The scaffolding the STEM teachers provided broke down the necessary steps into how to assess, comprehend, solve, and apply their skills (Root et al., 2022).

People with ASD have unique abilities they bring to their work. This variability has a home in STEM work where students are academically rewarded for finding unique ways to problem solve. For those on the spectrum, getting involved in STEM can be the difference between post-secondary success or stagnation. For those students with ASD who matriculate to post-secondary education, "college students with ASD study STEM at rates higher than students who do not have ASD" (Wei et al., 2013, as cited in Gobbo et al., 2018, p. 15).

Least Restrictive Environment (LRE)

Research has found the greatest indicator of post-secondary success is based in social skills (Nasamran et al., 2017). It is important students with ASD spend as much time as is appropriate in the classroom with their neurotypical (NT) peers (Fleischer & Zames, 2011). Interacting, problem-solving, socializing with NT peers in a school setting prepares adolescents with ASD for what will be facing them outside of high school. As set by the 2004 legislation, Individuals with Disabilities Education Act (IDEA), classrooms are to be operated as least restrictive environments (LRE). LRE, in part, means students must be educated with their NT peers as much is academically

responsible, and given access to “supplementary aids and services,” to keep them in the primary, NT classroom (IDEA, 2004; Underwood, 2018).

One thing school districts must be careful with in placing students with ASD and other special needs in CTE courses is following the laws regarding LRE. Problem areas include meeting a student’s IEP fully in the classroom or laboratory and keeping them in a LRE with other NT students. Individualized Education Programs (IEPs), another requirement of IDEA, are guides for teachers and caregivers for how a child requiring special education can achieve success in the classroom and school. IEPs are created when a child’s disability affects them physically, academically, and/or emotionally in the classroom (U.S. Department of Education, 2019).

With coursework often intrinsically tied with kinetic and cognitive performance at an advanced level, CTE course instructors are at-risk for shorting students with ASD by not meeting their IEPs. Additionally, if a school puts all students with ASD or other special needs in a CTE classroom, that breaks LRE laws because of the “one-size-fits-all” mentality. Course scheduling and course work should be unique to each student. While most students benefit from CTE, STEM, and agricultural education courses, the letter of the law observes this marginalized population has rights in their education, even as minors (Dieterich & Smith, 2015).

Agricultural Education

For this research specifically, the CTE career cluster of agriculture, food, and natural resources (AFNR) will be the focus. In AFNR, students are instructed in anything from agribusiness to food products and processing, or plant systems and environmental service systems. Agricultural education classes are offered at the secondary level in all

U.S. states and three of its territories (National FFA Organization, n.d.). Agriculture- or farm-based experiential education have been an impactful platform for training young adults with ASD in social, life, and career skills (Hutchins, 2015; Zhang & Choo, 2019). Young adult programs use the structure and repetition of agricultural work to provide, "[jobs] and life skills, problem solving approaches and social/communication techniques" (Hutchins, 2015, p. 26).

Incorporating all parts of STEM, agricultural work is generally highly structured and detail oriented. These aspects fit perfectly for adolescents with ASD to use their unique brains to complete unique tasks. If teachers and parents can provide the right support for students to learn and apply skills, the opportunities for success post-secondary are boundless. CTE's experiential education emphasis can change the projection of young people with ASD. And, for those who are responsible for this trajectory, current perceptions are important for understanding how school districts, teachers, and parents can better prepare their adolescents with ASD.

School-Family Partnerships

The Wall Street Journal has called Dr. Temple Grandin, "easily the most famous autistic woman in the world" (Weiss, 2010, as cited in Worsham & Olson, 2012, p. 11). Grandin cites her success in life as a person with autism due to the importance her mother and a teacher put on experiential education when she was a high schooler (Grandin, 2006). The school-family partnership fostered through her science class provided set-goals and fiercely needed mentorship. Grandin, one of the premier leaders in animal science research and creator behind how livestock are processed in the U.S. today,

credits, "...Teachers are worth their weight in gold. One reason I have been successful is because I had great teachers" (Grandin, 2006, p. 233).

Teacher Perceptions

As of the 2021-2022 school year, 15 percent of students in U.S. schools have a disability. Of those students with disabilities, ASD accounts for 12 percent of the sample population (National Center for Education Statistics, 2023). Having a disability in this connotation means students have IEPs and have ASD or another IDEA-specified disability. Most teachers today who are traditionally certified, having gone through a four-year or similar preparatory process, have taken at least one course related to teaching students with special needs. Since CTE courses are industry focused, some instructors are alternatively certified, meaning their exposure to content on how to best serve students with special needs is nonexistent. Because of the nature and inclusivity of agricultural education course structuring, at the public-school level many students with disabilities will be in the agricultural classroom or laboratory.

"A teacher's willingness to accept inclusion has been identified as an indicator of the quality of experience that a student with special needs will have in the classroom" (Soodak et al., 1998, as cited in Stair et al., 2016, p. 2). Regardless of training, certification, or years of experience, in-service teachers are called to be inclusive, flexible, and patient with their students with ASD. Teachers generally rate themselves highly on how they provide for their students with special needs. These positive feelings equate to a higher perception in self-efficacy (Stair et al., 2016). Inversely, what teachers need the most from the parents or guardians of their students with ASD is involvement and collaboration (Fallon & Zhang, 2013).

Parent/Guardian Perceptions

Parents, guardians, and families of students with ASD want mostly the same things. Caregivers want teachers who are highly qualified and trained to meet the needs of their student. They want instructors who respect their student, support them, and do not settle; rather, ideally, the instructors search for new and better ways to serve their neurodivergent student (LaBarbera, 2017). Such are the same wants of many parents and guardians for their neurotypical (NT) students (Epstein, 1986). A disconnect exists, though, between what caregivers want for their child and what really happens in meeting those needs. The perceptions of caregivers and teachers could not be more opposite.

In LaBarbera (2017), researchers found when 53 percent of parents responded they felt uninformed about the progress of their child with ASD, 100 percent of teachers felt they were more than adequately informing parents. This trend continued with other questions, caregivers rating various communications much lower than the teachers. The perception from the point of parents was they were not well enough informed about their child with ASD. A limitation to this regarding the LaBarbera (2017) study is the students and teachers were not involved in CTE courses. In comparing to parents of NT students, this is consistent with the findings of Epstein (1986). Epstein (1986) found a majority of parents felt they were not as well informed about their neurotypical child's progress as they should have been and could be involved more in the school through the child's teacher.

Parents are more willing to work with teachers if the teachers share explicit examples how to address the needs of their students and are updated on achievements and any disciplinary problems (LaBarbera, 2017). With the nature of agricultural education

comprising all three parts of classwork, extracurriculars (i.e., FFA), and work experiences (i.e., supervised agricultural experiences), the relationships a teacher has with students and parents are more connected to the home through work or farm visits, banquets, barn warmings, fundraisers, and other outside-of-school events (National FFA Organization, n.d.). In this, agricultural education instructors have opportunities for advantages in collaboration and inclusion.

Critical Disability Theory

Critical Disability Theory (CDT) is still an emerging approach in autism-based research, but has been found to be “innovative and effective” for this new generation of study (Glynne-Owen, 2010, p. 406). Moving away from the deficit approach of some earlier autism research, CDT in its core tenets represents the need for individuals with autism to transcend oppression and negative labels (Meekosha & Shuttleworth, 2009). CDT was not used in this study to identify deficiencies of the autistic experience in agricultural education. Rather, consistent with other qualitative studies (Lester & Paulus, 2012; Pellicano et al., 2018), CDT was used for showcasing the everyday, emic experiences of those living with autism; both as a diagnosed individual and their parent.

Conclusion

Adolescents with ASD are an under-researched population. Emerging and young adults with ASD are even more so. There is a clear deficit in knowledge about the perceptions individuals with ASD have about their education and specifically experiential education (i.e., CTE courses). It is a challenge to learn more about this population, in part, because these individuals struggle with understanding, articulating, and communicating their own thoughts and perceptions. Therefore, providing adolescents

with a platform for understanding, articulating, and communicating is even more relevant and necessary. The insights and perceptions researchers, school districts, policy makers, parents, teachers, and caregivers receive are important in better understanding and serving the community of children and adults on the spectrum.

Stories are the things of which legends are made; but such is the same for human beings. To know someone, it requires to listen to their story. The story of autism needs to be shared. One story excerpt from Higashida (2013) provides a beautiful, insightful summation on ASD:

I think that people with autism are born outside the regime of civilization. Sure, this is just my own made-up theory, but I think that, as a result of all the killings in the world and the selfish planet-wrecking that humanity has committed, a deep sense of crisis exists. Autism has somehow arisen out of this. Although people with autism look like other people physically, we are in fact very different in many ways. We are more like travelers from the distant, distant past. And if, by our being here, we could help the people of the world remember what truly matters for the Earth, that would give us a quiet pleasure. (p. 111)

Research Questions

The guiding research questions for this study are:

1. How does a high school student with autism spectrum disorder (ASD) perceive themselves in an agricultural education, Career and Technical Education (CTE) course?

2. How does a parent of a high school student with autism spectrum disorder (ASD) perceive their child in an agricultural education, Career and Technical Education (CTE) course?

CHAPTER 3. METHODS

Characteristics of Qualitative Research

According to Critical Disability Theory (CDT), quantitative methods are insufficient for analyzing societal phenomenon (Meekosha & Shuttleworth, 2009). For addressing possible explanations for phenomenon, Creswell and Creswell (2018) note qualitative research as the preferred method. The phenomenon in this case being the experiences of a student with ASD and their parent in agricultural education. Using a single case study approach to qualitative research, this study collected and interpreted the experiences of the participants. Case studies are sufficient for using the uniqueness of an individual's phenomena to draw understanding and context (Stake, 1995; Yin, 2018). Qualitative research is less about the volume of collection and more on drawing conclusions from the lived experiences of individuals (Creswell & Creswell, 2018). The researcher interviewed a student with their parent, then the parent by themselves. This was to increase comfort for the student in the study while maintaining their agency and voice in the project. The intention of having a one-on-one interview with the parent was to give the parent the space to speak and share their experiences without projecting on the student.

Qualitative Study

One of the six strategic themes for the Association of Career and Technical Education's (ACTE) 2023-2027 standards is inclusion, access, equity, and diversity. To promote vigorous CTE programs, those with special needs are to be included in CTE's diverse population of students (Advance CTE, 2020). As this is now a focus for the profession, so should be the research associated in career-readiness and agricultural

education. Though those with ASD are a marginal population in agricultural education and general high school classrooms, researching student experiences in agriculture education is relevant and topical.

As a poet and father to an autistic child, Matthew Zapruder writes and shares his and his son's experiences with autism, "not to capture him in words, or to present him to anyone, but to record the ongoing experience of being alive in relation to difficulty" (Zapruder, 2023, p. 68). This study has attempted to do the same. The case study was conducted through a two-part, in-person interview with the student and their parent then interviewing the parent by themselves. The research was conducted in the Commonwealth of Kentucky. Individuals with ASD are living everywhere across the country, not subjugated to a class, race, or region. Since the stories of the participants will be specific to their location, age, and experiences, results will not be applicable to those living in other areas.

Limitations

Limitations in this case study center around the lack of breadth in the data and the state of generalizing unique experiences. In-person contact between participants and the researcher lasted one afternoon. Data collection centered around single interviews and observational data collection with the student and their parent. Case studies use the lived experiences of individuals to create understanding toward a particular phenomenon or context (Yin, 2018). Though this study used the experiences of the participants to create understanding around autism in agricultural education, participants' experiences are not explicitly indicative of others experience of the phenomenon. Generalization cannot be expressed then for how another student with autism or their parent might perceive agriculture education or career and technical education.

Researcher's Role and Reflexivity

Both as a student and as an instructor in agricultural education, the researcher has had students with ASD in the classroom. The relationships built with those students influences the researcher's approach to autism in school-based agriculture education. As a researcher who is a white female, college educated, with a typical neurodevelopment, positionality is one of observer and not participant. In the past, the researcher has been guilty of not giving time or energy to provide students with a space to genuinely share. This includes students with disabilities, special needs, ASD, etc. This study is not to make amends or create absolution for past wrongs, but create a catalyst for dispelling ignorance, stereotypes, and misconceptions; this through the words of a student and a parent.

Communication barriers are often apparent in those with ASD. Communicating with autistics can be like looking through a veil; one struggles to understand how a person truly feels about a subject or another person. This is complicated further by individuals with ASD often struggling to understand the emotions of others and the emotions of themselves. This made it even more paramount to create a space and relationship of trust and openness with the study's participants. Their words and perceptions are the most important pieces of the study. As an outsider, the researcher may not be able to fully understand or share the experiences of someone with ASD. The researcher's role was to not let former experiences in agricultural education and personal experiences with autistics distort interpretations from data collection.

Data Collection Procedure

The purpose of this research was to collect and interpret the experiences of an adolescent student with autism spectrum disorder in relation to their enrollment in agricultural education courses. This study also collected and interpreted the experiences of the parent of the participant, regarding their student's enrollment in agricultural education courses. This marginalized student population is not new to agricultural education, but not until 2004 were these students guaranteed by law a place in a neurotypical classroom such as the agriculture classroom. Now so guaranteed, educators, administrators, parents, and policy makers should understand the perspective an adolescent with ASD has on career-readiness programs. This research study used observational data collection and semi-structured interviews to collect the experiences of the participants in agricultural education.

Participants

Since this study included working with a vulnerable population—an adolescent with an ASD diagnosis—precautions were taken by the researcher, committee, and University of Kentucky to maintain participants' protection. Upon approval from the Institutional Review Board at the University of Kentucky, as shown in Appendix A, verbal and written confirmations were received from all participants. Contact was initiated through the student's former agriculture teacher, eventually involving the current special education teacher and principal. Consent forms were presented and signed by both participants. Direct contact with participants prior to interviews was made through email and text message.

Participants in this study were a mother and her son with autism spectrum disorder (ASD) who had previously completed a year-long agricultural education course. The adolescent participant identified as a 19-year-old student. The adult participant identified as the parent of the adolescent participant. To maintain anonymity, participants were given pseudonyms. The student was given the pseudonym of Spencer and the parent the pseudonym of Brittney. The name of the county school and the family's business have also been redacted to maintain confidentiality.

Data Recording Procedure

Initial contact was made in June 2023 to agriculture educators and school administrators in the Commonwealth of Kentucky. Approval to conduct research at one county school was received in October 2023. IRB approval was given in November 2023. The researcher asked the agriculture teacher to share the study's information with those the teacher had identified as potential participants. The window for data collection was open for three months between November 2023 and February 2024. Contact was initiated from the participants toward the researcher in January 2024. Interviews were recorded with audio recording devices, aided with note taking during interviews and observational data collection before and after the interviews. No videos or photographs were taken, and each participant was given an alias to keep their identity confidential. The semi-structured interviews were held at the participants' family business based on their availability and the student's comfort.

The interviews consisted of two parts: first, interviewing the student with their parent in the room; second, a one-on-one interview with the parent. In the interviews, the format was introductions, consent questions, the semi-structured questions with any

additional clarifying questions, ending remarks and reviewing, then completion (Kvale & Brinkmann, 2009). Each interview section was slated to last 45 minutes. The student interview lasted 21 minutes, while the parent interview went for the full 45 minutes. Interview questions can be found in Appendix B.

Data Analysis and Interpretation

Following each interview, data analysis occurred. Data analysis was completed through transcript coding and creating themes and subthemes from the text (Bernard & Ryan, 2010; Cope, 2010). Interviews were transcribed verbatim, with the texts supplemented by field notes or observational data. These field notes were taken from a personal field journal kept by the researcher during and immediately after interviews. Transcripts were In Vivo Coded, then processed further using Concept Coding (Saldana, 2016). Cope (2010) also refers to these two stages as *descriptive* and *analytic* coding. In Vivo Coding occurs by selecting all reoccurring themes in the text. In Vivo Coding, interviews are coded verbatim, maintaining the voice and language of the participants (Saldana, 2016). Concept Coding, since being used with the grounded Critical Disability Theory, allows for the researcher to group findings into themes which will be tied back to the theoretical framework of the study (Saldana, 2016).

Since participants were asked to share their life experiences and stories in agricultural education, their stories were interpreted and shared to educate a wider audience. Though their stories are not indicative of every student's and parent's experience of autism in agricultural education, generalization on the part of the researcher can still be made (Cameron, 2012). Therefore, codes were developed into themes and those themes into findings. Themes are presented through the project's findings.

Interpreting the findings were filtered through the experiences of the researcher as educator, peer, and researcher in the disciplines of both autism research and agricultural education. Interpretation also follows the framework of Critical Disability Theory and its four core tenets: Quantitative methods are insufficient for analyzing a phenomenon, necessitating the need for theory; CDT acknowledges the need for individuals to transcend oppression; analysis is relative to the location and historical perspectives of the modern day; and a focus on human rights and personal agency allows individuals with disabilities to not only be representative but active members in the direction of discourse

Trustworthiness

The researcher's role and reflexivity have already been addressed. In sustaining validity past the researcher's individual limitations, multiple trustworthiness strategies have been used in this study. Miller and Crabtree (1999) cite recurrent exclusion of information to be viable information for coding and potentially pertinent to a research study. In the coding processes of this study, codes and their themes were siphoned off based on either the pattern of inclusion or exclusion. Following the patterns of routines, rituals, rules, roles, and relationships, data were collected and interpreted. This pattern-based approach to coding is a cited form of validity in qualitative research (Saldana, 2016). Field notes and transcripts were consulted throughout to maintain consistency during data analysis.

CHAPTER 4. FINDINGS

Overview

In this qualitative case study, a student with autism spectrum disorder (ASD) and his parent were given the opportunity to share their experiences in agricultural education. The following two research questions were used to guide this study:

1. How does a high school student with autism spectrum disorder (ASD) perceive themselves in an agricultural education, Career and Technical Education (CTE) course?
2. How does a parent of a high school student with autism spectrum disorder (ASD) perceive their child in an agricultural education, Career and Technical Education (CTE) course?

Participants were asked to share their perceptions and experiences through their involvement in school-based agricultural education. A semi-structured interview with each participant and observational data were collected by the researcher at the time of data collection. All data were first initially coded using In Vivo coding, then grouped into categories and themes through concept coding. Like most narratives, this study has its main characters and its primary place settings. In this study, the student is referred to as Spencer and his parent as Brittney. Apart from the main characters of the student and the parent, the other lead character is the student's former agriculture teacher. The name of the family's greenhouse business—where the interviews were conducted—and the student's county school are the primary locations in discussion. For confidentiality purposes, the name of the teacher has been changed to Ms. Laura and the settings to the ambiguous markers of the Family Business and the County School Agriculture

Department. The findings are detailed through their alignment to the two research questions.

Research Question One Findings: Agricultural Education is Meaningful for Student

After analyzing the recorded interview and observational data collected, the researcher found the student participant repeatedly expressed the meaningful nature of agriculture education classes. Meaning was centered around two topics; those two areas were created into the following sub-themes: (1) *Work in Ag Class is Meaningful* and (2) *Relationship with Ag Teacher is Meaningful*.

Work in Ag Class is Meaningful

Throughout Spencer's interview, it was evident he was very knowledgeable and experienced in horticulture and floriculture. When asked about his favorite things he did in greenhouse class, Spencer replied, "Uh, learning about everything. Learn about, with, greenery and more."

Three times Spencer stated an iteration of, "Ag class is important." This importance, and the meaning drawn from it, related to the very hands-on approach of coursework. Spencer never talked about group projects or paperwork. Meaning for this student was based on the very tangible skills and tasks he learned and performed with success. Again and again, he shared the evidence of the experiential education pieces of agricultural education.

When asked to share a 'typical day' in agriculture class, this was the exchange:

Spencer: Ag is important.

Brittney: But what did you do in Ms. Laura's ag class?

Spencer: Labels and flats [i.e., labeling plants they were actively growing]

{[...] Did you do other things outside of the greenhouse?}

Spencer: Uhh, learning pricing. Uhh, pricing extras: special poinsettias, extra Valentines, extra Easter, and extra Christmas. [...] Using and learning about, all about, [floral] arrangements.

Action and activity were integral to Spencer's experience in agricultural education. Not only does the student perceive agricultural instruction to be important, but his work in it to have meaning. Before the researcher sat down to talk with Spencer, there was evidence his role as a worker within the family greenhouse business was integral. An observation the parent reinforced during her interview. With several inches of snow on the ground and more in the forecast, the business' grounds were covered on the day of meeting. Spencer, as the researcher approached the front door of the offices/store front, was busy using a snow shovel and leaf blower to clear the pavement. Spencer is a worker and doer.

For Spencer, "Ag is going [...] out in the greenhouse." When asked to describe different jobs or careers outside of greenhouse and floriculture work he had learned from his time in agriculture classes, no new career pathways were mentioned. Spencer reiterated, when asked about jobs in agriculture, his family greenhouse business and some of the many tasks he performed. In Spencer's case, the career-readiness aspects of career and technical education through agricultural education were met. Experience in the agriculture classrooms with Ms. Laura supplemented the work he continues to perform with his parents.

Agricultural classes taken were in greenhouse and floriculture/floral design. Instruction for Spencer was finely tuned to personal interests and experiences at home.

Though the student never explicitly referred to his work in this way, the researcher has inferred his work at the family greenhouse business to be part of his supervised agricultural experience (SAE). SAEs are projects agriculture education students conduct where they earn money and/or experience in a job-setting. Spencer's work—greenhouse maintenance, greenhouse production, and floral design—are parts of his SAE which will most likely be his vocation the rest of his adult life (if so chosen).

Relationship with Ag Teacher is Meaningful

When the researcher asked why the student wanted to be in ag classes, there was initially no real response. He merely reiterated he had taken classes in the past. But, when the parent adjusted the focus of the question, Spencer's feelings were revealed. Brittney asked, "But why did you want to do those [ag classes]? Did you want to learn more about plants? *Or did you want to teach Ms. Laura on how to do plants and flowers???*" At the mention of Ms. Laura's name, Spencer's face lit up! "Ms. Laura!" he said. And when this response elicited a chuckle from the parent, Spencer repeated in a laughing tone, "Ms. Laura." The mere mention of this figure in Spencer's life was enough to have him smiling and the conversation to continue on-topic. The response which came from associating it more with his teacher elicited the phrase, "Something every day," from Spencer. "Something every day," is just as much about the work the student did in class *and* what he felt he had to *give* to Ms. Laura.

Give-and-take. The introduction of Ms. Laura, the agriculture teacher, suggests the student-teacher relationship is one of give-and-take. Acknowledging both teacher and student have knowledge to give and receive. Because the researcher was curious how—if

at all—the agriculture teacher acknowledged or used Spencer’s autism, the following questions were asked:

{How did Ms. Laura maybe use the fact you have autism to change projects around? Or [...] using the fact that you have autism as a strength in your projects?}

Spencer: Yep.

{Like how?}

Spencer: Like more information.

Most likely, this is evidence of Ms. Laura providing the accommodations attached to Spencer’s individualized education plan (IEP). A simple enough response. The researcher believes this to be telling for its lack of evidence. When specifically asked about accommodations centered around Spencer’s autism, the response was a generic accommodation many students receive whether they have ASD or not. Throughout the interview, as was highlighted in the first sub-theme, Ms. Laura’s attempts at strength-based instruction with this student were in the everyday work of agriculture class. Ms. Laura played to Spencer’s strengths by using his attention to detail and vast experience around plants to serve Spencer, the rest of his classmates, and Ms. Laura. Meaning was apparent in the everyday, mundane.

The relationship between the student and his agriculture teacher seems a meaningful connection in Spencer’s life. A relationship has been built in-class and outside of school time between the student, parents, and the teacher. The parent provided an example toward the end of Spencer’s interview:

She [Ms. Laura] comes out here and gets flowers and stuff. She tries to come after school—and a lot of times, he’ll be here. So she gets to see him. [...]

{Right, so [Ms. Laura is] still coming out even though Spencer's not in class?}

Uh huh. She'll come out and um order flowers—fresh flowers and stuff [...].

In this case, even though Spencer is not a current student in Ms. Laura's agriculture classes, time is still taken to maintain their relationship. The impression the researcher left the interview with also suggests the agriculture teacher not only cares and invests in this student for the student's sake; this investiture of love also provides meaning for the teacher.

Near the end of the interview, the researcher asked, "Spencer, is there anything else you'd like to tell me about being with Ms. Laura or being in ag classes?" The answer poignantly reveals the manner of Spencer's relationship with his agriculture teacher. This sequence was about how Spencer had asked Ms. Laura to be his date to the school prom the year before.

Brittney: No, what did you do? You made her a corsage.

Spencer: A corsage.

Brittney: From what?

Spencer: [Seemingly confused by this question from his parent] From... corsage.

Brittney: What did you make Laura's corsage *for*?

Spencer: [...] Prom.

Brittney: Yeah, prom. [Directing her gaze toward the researcher] Spencer asked Ms. Laura to prom last year.

It took fifteen redirections to get Spencer to admit he had taken Ms. Laura as his prom "date." In the opinion of the researcher, the time it took to drag the admission out of

Spencer was indicative of the typical response this question would have on any teenager. It can be embarrassing or difficult to express feelings of love and care for others—regardless of neurodevelopment and social skills. The researcher took this admission as a source of pride a teenager would share this with her, a practical stranger.

This exchange around Spencer asking Ms. Laura to prom led to the heart of Spencer’s involvement in agriculture classes and school-based agricultural education:

{Why do you like Ms. Laura?}

Spencer: Because she misses you.

It boils down to this: Spencer knows the agriculture teacher cares about him; and Spencer in trade, cares about the teacher, Ms. Laura.

Research Question Two Findings: Agricultural Education is Meaningful for Parent

After analyzing the recorded interview and observational data collected, the researcher found the parent participant echoed the same theme as her student. Though different in nature and outlook, the results were very similar: the parent repeatedly expressed the meaningful nature of agriculture education classes for her student. Meaning was centered around two topics; those two areas were created into the following sub-themes: (1) *Work in Ag Class is Meaningful for Student* and (2) *Relationship with Ag Teacher is Meaningful for Student and Parent*.

Work in Ag Class is Meaningful for Student

As a former student in agricultural education at the same county high school Spencer now is attending, Brittney wanted her student to experience agricultural education and FFA. Brittney took three years of agriculture classes, sharing:

We went to [state contests] and did the seeds [identification contest], and we went and done tobacco [grading]. [...] But we had a lot of fun. And I was hoping, you know, Spencer could experience some of that, too.

Throughout the interview, three categories emerged around the meaning of agriculture-based instruction and work for her student: instruction was seen as a reinforcement of training in their family business; provided socialization with peers; and offered opportunities for independence and self-actualization.

Brittney and her spouse operate multiple greenhouses and a floral shop. Through the county school, Spencer's last hour of the day is a work-study with the family business. Brittney also shared Spencer's Saturdays, summers, and school breaks are spent working for their business. The two classes Spencer took in the county school's agricultural department were a greenhouse operations course and a floral design course. When the researcher asked Brittney the impact those two classes have had on Spencer, she replied:

I think it just kind of helps... maybe [Ms. Laura] can educate him a little bit more, since she's, you know, newly out of school. [...] But I don't know, just kind of maybe teaching [Spencer] a little maybe more in-depth of maybe caring for plants or how to take care of plants, but in a different way than what, say, my husband's been growing up doing.

Brittney reinforced Spencer's earlier claim he liked and found agriculture classes to be important. Additionally, the parent saw how instruction from Spencer's courses transferred to his work in the family business:

I know he does like the uh ag classes, 'cause he would always come and say that he either watered plants or filled pots and uh stuff like that. So, then he comes here and does it.

Since the 2023-2024 school year is Spencer's last year in secondary schooling, the researcher asked Brittney what she hoped Spencer had gotten out of schooling in general. Brittney said, "Just getting out with others his own age. The communication, the socialization." Spencer communicating with others and advocating for himself has been and continues to be a concern for the parent. "Comprehension was a little... it's still a little rough, you know." Brittney shares the concerns of many parents when she said:

[I will] Bite my nails off worrying, 'cause somebody [might be] mistreating him 'cause he wouldn't be able to say, 'Hey, so-and-so was laughing at me.' You know, he might be laughing with 'em, not knowing, not understanding that they're laughing at him or making fun of him or whatever.

Though this is still a concern of the parent, Brittney shared later in the interview the positive nature of Spencer's interactions with peers. Though the fear of bullying, as Brittney described it, "is always on my mind," the parent added, "a

lot of kids are right there with Spencer all the time." "There's a lot of kids that take up for him." Socialization with peers is a consistent need in all of Spencer's classes, but Brittney provided an example how the work associated with the agriculture classes created a stronger peer-to-peer connections.

Continuing with the question of the impact of agriculture classes on Spencer's life, Brittney said, "From what I've heard from Laura, Spencer may kinda be a little bit of a teacher, as well." Using the work-based instruction from home and school, Spencer has been able to use his knowledge and experience to teach and build connections with his peers in the agriculture classroom. This was most evident in a visit to the family

greenhouse and floral business from the county school's agricultural education department:

[Spencer] picks up what we've done here and say, [...] like, 'I know how to do this, let me show you,' kind of thing. You know when, he was so thrilled I had his class come out last year. [...] They come out and looked at the plants and everything, and he was just, he was so proud of himself! Like, 'This is what I did!' Showing them off and, and, then he would make sure all the labels were the right way and turned the right way and um... But I don't know. Just seeing him with all the other kids from his classroom, and even the teachers, he was just like, so proud, like, 'This is what I did!' You know, 'I did this!'

Agriculture classes and Spencer's strengths have been useful for creating meaning not only around the hands-on work but in the self-identity Spencer is shaping through agricultural work. As in the previous excerpt, Spencer's work in the greenhouse at school and home is a point of pride for himself. Brittney shares how working in the greenhouse provides him with independence and opportunity.

So, you know, just different things you'd ask him to do and he does it. Um, there's not many things he won't try. [...] Um, and that's what I want: as long as he tries, I want him to have every opportunity that anybody else would have. I don't want him to be... typed *different*. Of course, I mean, I know there's—we have a lot of customers that know Spencer. [...] And know his situation and they know how to somewhat talk to him. Know that he might not respond right back. [...] But, you know, I just want him to have every opportunity everybody else has. And having a good support system helps, too. And I'm thankful I have this he can fall back on.

Whether it is clearing the sidewalk of snow, checking the greenhouse fans, or fixing labels and signs for the family business, Brittney notes Spencer is an active worker at home. One specific way agriculture classes provided Spencer with confidence was through greenhouse sales. As a parent-advocate, Brittney wanted Spencer to be able to make change and do figures for operating a cash register. This requirement was fitted to

Spencer's IEP and Brittney provided the school with examples of how their business' cash register runs.

You know, I've kind of showed them our tickets, so I would take some to school, that way he would know to ring it up on the cash register and know how much money to give 'em back. [...]

{And, and he got that experience, the—that hands-on experience—here [at the family business]? Or is he also getting that at the ag classes, as well?}

He got it here and then there in the ag class.

Though instruction at home and in the agriculture classroom were specialized to the family business, this instructional approach is consistent with other trainings for young adults with ASD (Bos & Peijen, 2021; Hillman et al., 2021). Once Spencer was sufficiently trained in making change and operating a cash register, his skills sets were used not only at home but in the agriculture department. Brittney shared how Ms. Laura would call to Spencer's LBD (Learning and Behavior Disorders; i.e., special education room) classroom during spring greenhouse sales. If Spencer were available for the hour, the agriculture teacher would have Spencer operate the cash register and credit card machines. Brittney made the connection from this experience to an increase in seeking responsibility and performing tasks unprompted.

He has actually come so far. That I never thought he would do, um, as far as the money, being independent, as much as he is. Um, you know, just telling him—or asking him, not telling him—um, I didn't know that was him blowing the snow off [in reference to when the researcher was entering the business]. I thought it was the other guy! And then, he come in—'Who's blowing the snow?!?' And it was Spencer!! I didn't know he knew how to use that thing!

Spencer is hitting his stride as an emerging adult with autism spectrum disorder. Agricultural education classes were not the sole reasoning behind this step in Spencer's life, but they have had a role to play. The drive to experience and do more has been kindled in the home, provided differentiation in the agricultural classroom, and is apparent in Spencer's work for the family business. Self-actualization, meaning for Spencer, is intrinsically tied to the instruction, exposure, and successes he has experienced through agricultural work.

As a parent, for Brittney there is a hope of increased independence for her son: "So, you know, just different things you'd ask Spencer to do and he does it. Um, there's not many things he won't try."

Relationship with Ag Teacher is Meaningful for Student and Parent

When Spencer was asked why he liked his agriculture teacher, Ms. Laura, the student said, "Because she misses you." This sentiment is echoed through the parent. When discussing Ms. Laura, Brittney's face would brighten, and her tone would take on a confident manner of expression. Brittney mentioned how Ms. Laura makes a point of involving Spencer in the agriculture department, even though he was not a current student. As previously highlighted in the first sub-theme, the cash register story serves additionally as an example of Ms. Laura maintaining a positive, strengths-based student-teacher relationship:

They'd give Spencer an option if he wanted to go down to the ag—to do something if Laura, you know, had something for him to do. [...] But yah, if there was something that, you know, Laura [would say], 'Hey, can you send Spencer down? I've got something he can do;' instead of just sitting in the classroom, if there wasn't anything important to do. And, when they did their—when he was talking about money and sales, [...] she would always ask if he could come down 'cause he is good with money!

The agriculture teacher continues to be intentional with involving and empowering Spencer in the school. This is a relationship which was built daily during two years of instruction. Even though the daily contact is gone, the intentionality on the part of the teacher has been consistent. The parent recognized the unique and positive aspects of Spencer and Ms. Laura's relationship. So much so, the parent acknowledged how the agriculture teacher was, "really bummed," about losing Spencer as a student in the current school year. When Brittney was asked how she felt the agriculture teacher worked well with Spencer, she replied:

She just knows how to handle Spencer and show love for him. I mean, they got along so well, so she's—Laura could probably tell him to jump and he'd say how high? [chuckling] But, no, I mean... I haven't had to say, 'Laura, you really need to do this... or, you know, ask him to do that.' But she's just—it's like, she knows what she's doing with him.

It is that confidence in the student-teacher relationship which then applies to confidence and trust in the teacher-parent relationship. Earlier in the interview, Brittney had shared frustration with the school's administration and special education department. This frustration was centered around the parent's perceived lack of oversight from administration, out-of-field teaching (i.e., the former physical education teacher transitioning to the special education teacher), loss of routine, and lack of communication with her as a parent. Having earlier expressed frustration around lack of communication from other teachers in the school, the parent was asked about the communication she received from the agriculture teacher:

{How would you describe the communication between you and Laura?}

Really good. Um... like I said, you know, if she had a question, she would call me or she would text me. And I told her, 'Day or night.' [...] I've told her, 'Do whatever you want to, you know. I believe—I trust you.' [...] So, I mean, it's always been open [her communication with the agriculture teacher], you know, to whatever she's wanting. I'm good with whatever she's wanting to do.

This in stark contrast to the perceived communication between Brittney and other teachers in the school. A glimpse as to why this may be is in the effort the agriculture teacher took to share student successes:

She would always tell me, sometimes before but sometimes after the fact, she'd said, 'Oh, Spencer was a big help!' And that first time, I was going, 'Ohh! OK! I didn't know anything about it.' Um, so that made me feel good that she asked for Spencer to go down [to the ag classroom]. [...] So, you know, that was like, 'Aweee...' Made me—you know, some things you don't hear as a parent that your kid has done. So, you know, the first time I heard that she asked him to run the register or whatever, to work the money, I was just like, 'Awe...' [crossing arms across chest in an embrace]

When asked if other teachers were sharing those same success stories, Brittney did not express the same trust. "Some would, but not a lot of them. I would hear from, um, the kids more than I would the teachers." The agriculture teacher's tendency to not only involve the student but communicate student successes made the difference. In a school system which, as Brittney shared, has had high turnover and attrition in the past year for the special education department, trusted teachers are hard to find. Ms. Laura has been a constant, even as a former teacher, in Spencer and Brittney's connection with the county high school. Brittney expressed the utmost confidence and trust for the agriculture teacher.

And knowing that Laura was the teacher, I knew—I didn't have anything to worry with. Knowing that you have a good teacher—not saying that there's bad teachers,

but you know... there's some iffy ones. And she [Ms. Laura] knows what she's doing.

On the perception this parent had of her child in agricultural education, the relationship with the agricultural teacher was paramount. This relationship serves both for student and parent in finding meaning not only in the agriculture education department, but the greater school community. These relationships—between student and teacher, and teacher and parent—have been planted, nurtured, and continue to grow. The planting was in the student's enrollment, but the nurturing continues through positive communication and active involvement.

{And correct me if I'm wrong—it sounds as though Laura has done a really great job playing to Spencer's strengths—}

Oh yeah!

{—throughout the years.}

Yeah, she has.

Summary of Findings

In conclusion, the researcher finds data collection resulted in four sub-themes within the case study. Research question one was focused on the perceptions of the student with autism spectrum disorder on agricultural education. The two sub-themes were centered in the student's perceptions of *Work in Ag Class is Meaningful* and *Relationship with Ag Teacher is Meaningful*. Three categories emerged from the findings.

Coding revealed how the student finds agricultural education as important, sees himself as a worker/doer, and as loved by his agriculture teacher.

Research question two was focused on the perceptions of the parent on her student's time in agricultural education. The latter two sub-themes were adjusted to the parent's perceptions of *Work in Ag Class is Meaningful for Student* and *Relationship with Ag Teacher is Meaningful for Student and Parent*. Categories under the first parent sub-theme were on how agriculture classes reinforced training between home and school in the family business, provided socialization for student with peers, and enabled opportunities for independence and self-actualization. Categories under the second parent sub-theme focused on the positive communication between teacher and parent, continued active involvement of Spencer even as a former student, and the apparent care and affection the agriculture teacher has for the student.

CHAPTER 5. CONCLUSIONS

Restatement of Research Problem

Individuals with ASD are more likely to be underemployed and unemployed than their neurotypical peers without ASD (Cherlyan et al., 2021; Hillman et al., 2021). When two percent of the United States population have ASD (Lee et al., 2022), those same individuals are exiting our secondary schools without career readiness. Skills necessary to find and maintain post-secondary employment are available through career and technical education (CTE). Agriculture education, a pathway of CTE, offers courses geared more for “hands-on”, experiential instruction than the average “traditional” classroom.

The purpose of this case study was to collect the experiences of an adolescent with autism spectrum disorder who had taken at least one year of agriculture education classes. This case study also collected the perceptions of the adolescent’s parent on agricultural education. Findings from this case study reveal: for the student (1) the meaningful nature of agriculture class and (2) the meaningful nature of their relationship with the agriculture teacher; for the parent (3) the meaningful nature of agriculture class for the student and (4) the meaningful nature of the relationship between both student and parent with the agriculture teacher.

Discussion

The chief aim of this qualitative case study was to allow a student and their parent to share their experiences of autism in agricultural education. There is little to no study on the experiences of autistics in agricultural education. This study aims to increase the understanding around this population in the discipline of agricultural education. To do so, the following two research questions guided this study:

1. How does a high school student with autism spectrum disorder (ASD) perceive themselves in an agricultural education, Career and Technical Education (CTE) course?
2. How does a parent of a high school student with autism spectrum disorder (ASD) perceive their child in an agricultural education, Career and Technical Education (CTE) course?

Research Question One Discussion

The perceptions of the adolescent student revealed several key experiences for the phenomena of his experience in agricultural education. Data collected from the student interview and observational data were divided into two sub-themes. The sub-themes of *Work in Ag Class is Meaningful* and the *Relationship with Ag Teacher is Meaningful* were broken down further into three categories. The three categories show the student's beliefs about the importance of agricultural education, perception of himself as a worker/doer, and the affection he perceives from his agriculture teacher.

The meaningful nature of the student, Spencer's, experiences within agricultural education are indicative of many experiences adolescents have in agricultural and/or career and technical education. Notably in the creation of their self-identity (Bowling & Ball, 2020; Ramage, 2021). Spencer perceived the work in his agriculture classes to be important. Not only did he say, "ag is important," but expressed its importance in the knowledge he shared. Agriculture and agricultural education are important not only because it is how his family greenhouse business operates. The importance is intrinsically tied with the ability Spencer expresses in agricultural work.

As part of Critical Disability Theory (CDT), the researcher aims to see disability and ability as discovered not “produced” or put on an individual (Hall, 2019).

Agricultural education was the platform through which Spencer discovered his ability to perform important tasks. This is consistent with findings from other autistics in agricultural work (Hutchins, 2015; Zhang & Choo, 2019). Thus, the perception he sees himself as a worker/doer.

When asked to describe a ‘typical day’, Spencer started a laundry list of activities, skills, and tasks he had performed in classes. The student never explicitly described a typical day, but his responses were indicative of his time in agriculture classes—every day was different. The consistent piece was the active nature of his work. Spencer never detailed a day in ag class; rather, he listed some of the many experiences he had in Ms. Laura’s agriculture classes. The question was answered, but in a way which was reasonable for Spencer to share. Spencer’s time in agricultural education had been uniquely and specifically tailored to his strengths. Those strengths were discovered through instruction and performance but nurtured through his relationship with Ms. Laura.

The agriculture teacher, Ms. Laura, is the linchpin in this story. Her connection is vital to Spencer’s experiences in agricultural education. Spencer’s discovery around his ability and the importance he expressed toward agricultural education were centered around the relationship with Ms. Laura. Though Ms. Laura was never interviewed on her perceptions on effectively teaching and serving students with disabilities, based on the responses of participants, she is a competent teacher. Agriculture teachers who reflect and understand the relationship between behaviors and achieving goals, have been found to

be more comfortable working with students with special needs (Stair et al., 2016). The assumption on the part of the researcher is Ms. Laura was able to reflect upon and understand Spencer's needs in order for him to gain success in the agricultural classroom. From that understanding, Ms. Laura enabled Spencer to gain self-identity and self-actualization in his work.

But for Spencer, when it came to Ms. Laura, her name did not evoke feelings of identity or self-competency. When the name of the agriculture teacher first came up, the only thing her name evoked was a smile on Spencer's face. This student deeply cares for his agriculture teacher. Even as a former student, Spencer perceives himself to still be loved by Ms. Laura. "Because she misses you," Spencer said when asked why he liked Ms. Laura. The love and affection the student perceives from his agriculture teacher were the binding agents for his success in agriculture classes. It is a relationship into which the teacher has poured intentionality, care, and thoughtfulness. The linchpin, the relationship with the agriculture teacher, has been crucial for experiencing and expressing success in agricultural education.

Research Question Two Discussion

The perceptions of the parent revealed several key perceptions for the phenomena of her student's experiences in agricultural education. Data collected from the parent interview and observational data were created into two sub-themes. The sub-themes of *Work in Ag Class is Meaningful for Student* and the *Relationship with Ag Teacher is Meaningful for Student and Parent* were broken down further into six categories. Under the first sub-theme, the three categories were how agriculture class reinforced for the student training from home-to-school, provided socialization with peers, and

opportunities for independence and self-actualization. Under the second sub-theme, the three categories illustrated the positive communication, continued active involvement of the student in agriculture class, and the apparent care and affection the agriculture teacher has for the student.

Brittney is a parent-advocate. For the past nineteen years of Spencer's life, she has been the initiator. Due to the nature of her son's neurodevelopment, she has put in more time and effort with schools, teachers, paraprofessionals, and peers, than most parents of neurotypical students. Based on her own positive experiences of her time in agricultural education, it is no wonder she advocated for her child to take agriculture classes. The remarkable part—the power and unique qualities affixed to a good agriculture education department—was Spencer found his own path and flourished under agricultural instruction and Ms. Laura's tutelage. This perception of a positive, meaningful time for Spencer in agriculture education was evident throughout Brittney's interview.

Research shows individuals with ASD are not being fully utilized by the workforce, with less than 15 percent of young adults with ASD earning a wage post-secondary (Fong et al., 2021; Hong et al., 2017). Spencer has been trained both at home and in his agriculture classes to operate a greenhouse and floral design lab. Spencer will have full-time employment, as long as his parents keep the family greenhouse business, and he chooses to continue in his current position.

If he were to change jobs or employers, Spencer's skills are likely transferable to another business. This is a success for this young adult with autism—he will be fully employed. Though the wage situation is unknown to the researcher, moving forward into

adulthood, Spencer is in a great position to earn a living wage in a trade he likes and excels in performing. School-based agricultural education – classroom instruction and his supervised agricultural experience project – have increased his career-readiness.

The highly specific nature of Spencer’s agricultural experiences has been relevant to his strengths. As for agriculture education improving upon one of his weaknesses (e.g., social skills), agriculture classes had provided growth in this area, if only in a marginal way. As Brittney expressed, agriculture classes provided a platform for Spencer to interact and even feel pride among his peers. Spencer was given opportunities to be seen and perform as a peer-expert within his class through greenhouse operations and sales. Though Brittney’s perception of Spencer’s socialization in agriculture education is important to note, agriculture classes did not exponentially improve socialization with peers. Rather, agriculture classes provided the continued small doses of socialization Spencer has fixed to his IEP and experiences as a fellow high schooler.

The example Brittney provided of Spencer performing as a “kind of a teacher” is also relevant for the perception of Spencer’s increased independence and self-actualization. When asked what she had as far as hopes and dreams for her son, Brittney shared her hope Spencer would live an independent life. She went on to say, “I want him to have every opportunity that everyone else would have.” When Spencer delivers flowers from their business to the local funeral parlor, or helps a customer with an order, or learns to shave his facial hair from a YouTube video, Brittney’s hopes are being realized. Spencer, regardless of the supports in life and work he requires, is a very independent young man.

Home has perhaps more to do with his independent nature than two years of agriculture classes, but his time with Ms. Laura was important for building self-actualization. In the examples of running the school's greenhouse cash register and teaching his peers in the greenhouse, Spencer was given agency. As a student, responsibility was placed on him, and growth occurred from those experiences. Brittney as a parent saw the impact of those experiences and has continued to provide those opportunities in growth.

The parent found Spencer's work in agriculture classes to be meaningful. But it is in the opinion of the researcher the true meaning and catalyst for success in Spencer's experience with agriculture education have been through his teacher, Ms. Laura. For the two participants, the agriculture teacher is a special friend in both of their lives. Brittney, the parent-advocate since Spencer was a toddler, seemingly took a breath of relief when it came to her experiences with Ms. Laura. That relief, in part, to the positive nature of communication between teacher and parent regarding her student.

Brittney trusts Ms. Laura. That sums up much of their relationship. For a parent who has not always felt comfortable enough to trust her son's teachers, Ms. Laura is a novelty. That trust has been nurtured through the years by positive communication. There is an intentionality to Ms. Laura's spirit and approach to relationships. When Spencer was still a student, Ms. Laura would communicate to Brittney successes her student was having in agriculture class. When Spencer was no longer a student, Ms. Laura still made a point of bringing him back to the school greenhouse, sharing those successes, and spending out-of-school time to maintain her relationship with both Brittney and Spencer.

Communication was not every day; there was not a daily progress report being sent to Brittney's email from greenhouse or floral design class. But when communication came, it was specific and positive. Brittney's positive perception of the agriculture teacher's communication is unlike findings from other parent-teacher communications (LaBarbera, 2017). Ms. Laura and Brittney have a good communicative parent-teacher relationship. The same cannot be said for other high school teachers in Spencer's school life. Ms. Laura is the exception to the rule.

The researcher believes this exception is due to the nature of Ms. Laura's relationship with Spencer and Brittney: she cares about her student. Parents of students with ASD want teachers who express genuine care and respect for their child (LaBarbera, 2017). Ms. Laura continues to do this even as a former teacher. This is an example of the agriculture teacher increasing the amount of time Spencer spends in a least restrictive environment (LRE) and amongst his neurotypical peers (IDEA, 2004). The agriculture teacher seeks Spencer out, involves him in his former classes, is intentional about seeing him outside of school time, communicates well with his parent, and provides a positive connection to the greater school community for both parent and student. As a parent, Brittney knows the agriculture teacher cares about her child, which in turn creates feelings of trust and care for the parent-teacher relationship. Ms. Laura is an example to the profession for how to make and maintain meaningful connections with parents and students—regardless of students' neurodevelopment.

Recommendations for Future Research

Since the nature of this case study concerns studying the experiences of one student and their parent around a phenomenon, findings cannot be generalized to the

experiences of other students and parents. This necessitates further research in the field of autism studies. The researcher recommends an increase in qualitative studies about adolescents with autism in agricultural education, increased and improved education concerning autism spectrum disorder, and ways to improve upon student-parent-researcher interviews.

As Brittney mentioned in her interview, Spencer sometimes has difficulties with processing and comprehending. Spencer's responses—both in what he said and how he said them—are not indicative of any other adolescent with autism spectrum disorder in agricultural education. The researcher strongly recommends this form of qualitative study to be replicated and expanded within the experiences of adolescents with ASD in career and technical education. More needs to be known about the lived experiences of autistic students.

This case study centered on 61 minutes and 48 seconds of combined audio recording between the student and the parent interviews. The researcher contacted several schools in the Commonwealth of Kentucky. Of all the county high schools and their agriculture education department contacted, and all the agriculture teachers at those schools and their students with ASD, Brittney and Spencer were the only participants to consent to this study. To increase the number of qualitative studies in this discipline, the researcher recommends giving more than three months for data collection. Due to the condensed amount of time the researcher had available for this study, and the lack of interest from school districts, agriculture teachers, and potential participants, more time is recommended for expanding and improving this type of study in the future.

The parent interview provided some examples of frustrations concerning the need for improved education around autism. Though not fully addressed in the study's findings due to their lack of germaneness, Brittney's experiences serve a purpose for the future. When Brittney shared how Spencer's current special education teacher was the former physical education teacher, she said:

I don't know how they can do that [by having a P.E. teacher as the special education teacher]? And, you know, I guess they never looked for a special education teacher, so that frustrates me [said with emotion in her voice].

Blatantly voiced frustration—and not just concerning out-of-field teaching. Going on in the interview to say the special education department had made Spencer and her feel “overlooked.” Whether it was about food allergies, annual field trips, or behavior patterns, Brittney noted there are a lot of things teachers do not know what to do when it comes to having a student with ASD in class. Though she did not mention these feelings of frustration toward the agriculture teacher, in the instance of this recommendation, the researcher recommends ALL educators, administrators, and school workers complete pre-service and in-service trainings on serving students with ASD. When serving a population which is often misunderstood, actions should be taken by school districts to keep their teachers qualified to serve this population of students.

That same misunderstanding was prevalent during the researcher's time with Spencer and Brittney. Speaking with Spencer felt at times like shifting through a haystack to find a scattering of needles. As is often the case for those with ASD, understanding and expressing one's emotions were often a challenge in the interview. Spencer's gaze would circle around to other corners of the greenhouse and the number of redirections or

prompts required to gain a response would increase. The questions with the highest number of prompts required were phrased around describing a typical day of agriculture class, detailing why Spencer had wanted to be in agriculture classes, and final thoughts to share about his ag teacher or agriculture classes.

Throughout the interview the student's parent was sitting beside him. The reason behind this approach was the parent could provide support when needed to bridge any communication barriers between student and researcher. And the parent did that. There were many times when Spencer would grab the hand of Brittney, petting and stroking the parent's hand for comfort. Having the parent there was the right decision in this instance, but it may not be necessary with future renditions of this type of study. Though the parent provided physical and emotional comfort for the student, there was also a lot of prompting from Brittney; and not all prompts were completely necessary.

The researcher found for each initial question, an average of 5.3 prompts or redirects were given by either parent or researcher. The parent's efforts did help expedite the interview process along, but the researcher felt Spencer was not always given enough time to contemplate his answer. Not enough time was given for silence and possible re-wording from the researcher herself. One future recommendation would be to spend more time covering expectations with the parent(s) before the interview; amount of input, the need for silence, letting their student have space to speak, etc.

As a researcher in the disciplines of agricultural education and autism studies, future recommendations apply not only to future researchers and other professionals, but to the researcher herself. Though this study may have ended, the non-formal collection of data and interaction with participants is just beginning. The researcher will be entering

the high school agriculture classroom starting fall of 2024. The findings, recommendations, and lessons from this study are the starting point for the researcher. Students with autism spectrum disorder and their parents will be the inevitable future for her. The researcher sees the experiences of this case study as a privilege and an honor. The understanding gained from this case study will be used and tried out against all her future students who have the unique gift of autism in agricultural education.

Final Words

There are two key lessons the researcher would like to part on. These lessons center on (1) the need of continued research in the experiences of individuals with autism spectrum disorder and (2) the power of motherhood and advocacy. During Brittney's interview, the parent shared what she wishes others knew about autism. Here are her words:

There's a lot of challenges that people don't know. Even with autism, you know, people don't understand it. And I wish they did. I wish there was more education about it. But everybody's different, so, so there's no way. But I don't know... Going through all these years of school and seeing different, um, you know—the different kids and everything—how, what makes them tick and throws them off [...]. But, yeah, [autism; parenting someone with autism] is a challenge. But I wouldn't trade it for anything. *Would NOT trade for anything.*

Brittney's wishes are recommendations for not only the discipline of agricultural education, but education in general. There should be mandatory, pre-requisite courses devoted to learning about, understanding, and gaining tools for serving students with disabilities in all teacher-preparatory programs. There should be mandatory, pre-requisite courses devoted to learning about, understanding, and gaining tools for serving students with ASD in all teacher-preparatory programs. There ought to be continuing education

courses and workshops for career teachers and administrators in this field of study.

Education and advocative measures should be made with those who hold political power over students with disabilities in the school systems; school boards, local officials, and state and national politicians.

As a researcher within the cross-disciplines of agricultural education and autism studies, the focus can often be solely on the macro movements; state legislation, school initiatives, course catalogs, etc. But from the above excerpt, Brittney's call for increased knowledge and understanding is framed around the love of a mother. The love for her child as a parent-advocate. Brittney's words show she is a mother who would not change the circumstances of her son's development. In acknowledging the challenges, she shows her trump card: love. That is the necessary tool for understanding the experiences of students with autism: love like that of a mother for her child. Embracing the differences, seeing autism as the unique gifts it provides, and loving the child for who, *especially for who*, they are. What could our world be if all teachers approached their students with this kind of love? As Dr. Temple Grandin said, "Teachers are worth their weight in gold" (Grandin, 2006, p. 233).

APPENDICES

Appendix A – IRB Approval



Office of Research Integrity
IRB, RDRC

XP Initial Review

Please note: The IRB wanted to remind the PI they may add as many schools that will provide a Letter of Support but that they may not recruit or begin any research activities in those schools until a modification request has been submitted and approved.

Approval Ends:
11/20/2024

IRB Number:
88504

TO: Grace Miller, Bachelor of Science in Agricultural Education
Community & Leadership Development
PI phone #: [REDACTED]
PI email: Miller.G.C@uky.edu

FROM: Chairperson/Vice Chairperson
Nonmedical Institutional Review Board (IRB)

SUBJECT: Approval of Protocol
DATE: 11/21/2023

On 11/21/2023, the Nonmedical Institutional Review Board approved your protocol entitled:

Autism in Agricultural Education: A Phenomenological Study of the Perceptions of Adolescents with Autism Spectrum Disorder and Their Caregivers on Career and Technical Education

Approval is effective from 11/21/2023 until 11/20/2024 and extends to any consent/assent form, cover letter, and/or phone script. If applicable, the IRB approved consent/assent document(s) to be used when enrolling subjects can be found on the approved application's landing page in E-IRB. [Note, subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.] Prior to the end of this period, you will be sent a Continuation Review (CR)/Annual Administrative Review (AAR) request which must be completed and submitted to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The research procedures should be implemented as approved in the IRB protocol. It is the principal investigator's responsibility to ensure any changes planned for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval to eliminate apparent hazards to the subject(s) should be reported in writing immediately to the IRB. Furthermore, discontinuing a study or completion of a study is considered a change in the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "[PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research](#)" available in the online Office of Research Integrity's [IRB Survival Handbook](#). Additional information regarding IRB review, federal regulations, and institutional policies may be found through [ORI's web site](#). If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at 859-257-9428.

see blue.

405 Kinkead Hall | Lexington, KY 40506-0057 | P: 859-257-9428 | F: 859-257-8005 | www.research.uky.edu/ori/

An Equal Opportunity University

Appendix B – Interview Questions

Questions for student

- Will you tell me a story about your favorite day you have had in ag ed class?
 - What do you usually do in ag class each day?
 - What was your favorite day of ag class like?
- Why do you continue to take (or why do you think you took) an ag ed class?
 - What makes you excited to come to ag class?
- What do ag ed classes have to offer to you that traditional high school classes do not?
 - How is ag class different for you when compared to Math or English?
- Think about your ag teacher. In what ways has the ag teacher used the uniqueness of your autism when making assignments or creating projects?
- What careers or jobs have your ag ed classes interested you in?
 - What projects have you done or are doing as part of your Supervised Agricultural Experience (SAE)?
- What else would you like to share about your time in ag ed classes?

Questions for parent

- After hearing your student speak earlier, is there anything you would like to add or elaborate on from their statements?
- What are your hopes/dreams for your child?
- In what ways do you think your child's time in ag ed has had an impact on those hopes/dreams?
- What do you hope for your student to get out of high school? Out of ag ed?
- In what ways has the agriculture teacher been open to learning more about how to best accommodate your child? Listen to your concerns or hopes?
- How would you describe the communication between the teacher and yourself about your student?
- What else would you like to share about your student's time in ag ed classes?

Appendix C – Student Interview Codes

Code	Description
Accommodation	Agriculture teacher provided more time for assignments/projects to accommodate student's autism-related needs.
Agriculture Class	Greenhouse and Floral Design courses taken with Ms. Laura, the agriculture teacher, at county high school.
Arrangements	Floral arrangements created by student in agriculture class and at family's business for various holidays and events.
Content Knowledge	Descriptions of various plant science-related content from agriculture class.
English Stories	Readings and stories student loved in English class and Agriculture Class; 'To Kill A Mockingbird' in English and 'Where the Red Fern Grows' in Agriculture.
Filling Pots	Filling flowerpots with soil and seeds/flowers for sale; task regularly performed at home and school.
Importance	Student's perceptions on what mattered about schooling and content in agriculture class.
Labels and Flats	Labeling and filling plastic trays with containers filled with soil and seeds/flowers for sale; task regularly performed at home and school.
Liking the Agriculture Teacher	Student cares for agriculture teacher; acknowledges teacher cares for student as an individual.
Ms. Laura	Former agriculture teacher; elicits a joyful response/repose from student when mentioned.
Pricing	Attaching prices to greenhouse products for sale; task regularly performed at home and school.
Prom	School-wide social event student asked agriculture teacher to attend with him.
Prompting	Redirection or rephrasing of a question performed by parent and/or researcher to aid student's comprehension.

Appendix D – Parent Interview Codes

Code	Description
Agriculture Classes	Student’s previously taken courses in greenhouse management and floral design; high school experiences student has enjoyed.
Allergies	Common accompaniment to autism diagnosis; student has severe peanut allergy.
Blowing Snow	Example of independence and self-imposed responsibility by student.
Bullying	Fear for parent regarding student’s experience in school.
Communication with Ag Teacher	Positive perception of communication between parent and agriculture teacher.
Comprehension	Student’s ability to understand a question, comment, joke, or other communication; area of need for student.
Educating Others	Parent expressed need for teachers to know and understand more about autism spectrum disorder (ASD) and how to better serve those students with ASD.
Family Greenhouse Business	Greenhouses and a floral shop owned and operated by parent and her spouse; where student works after school, on breaks, and on the weekends.
Frustrations	Negative associations with country school’s special education department and teacher, student’s other teachers, lack of experiential education in school, and COVID-induced virtual learning.
Hands-On	Kinetically and cognitively engaging instruction in agriculture class; parent’s positive perception of agriculture-based instruction.
IEP	Individualized Education Plan; parent included requirements around money management and socialization be attached to student’s IEP.
Independence	Student’s ability to perform technical and living skills with minimal to no support from parent; what parent wants for her student.

Job Experience	Student's work at family greenhouse business; part of student's Supervised Agricultural Experience (SAE).
Ms. Laura	Student's former agriculture teacher; implicitly trusted by parent; though not actively enrolled, still involves student in agriculture department.
Out-of-Field Teaching	Educators in school district teaching subjects not initially certified to teach; parent's frustration with special education teacher being the former physical education teacher.
Overlooked	How the parent felt she and her student had been treated by the special education department this school year.
Parent-Advocate	Communicator of needs, wants, worries, etc., for child to teachers and the school district; additional role parent performs for child.
Parent-to-Teacher Contact	Consistent and proactive contact initiated by parent with all teachers, including the agriculture teacher.
Positive Association with Agriculture Classes	Parent is a former student in county school's agriculture education department; perceived time in program as "a lot of fun."
Self-Actualization	Student's ability to perform tasks based on his strengths and potential; feeling of pride and accomplishment for student; what parent wants for her student.
Sharing Successes	Agriculture teacher makes a point of sharing positive experiences student has in agriculture department; parent perceived other teachers (i.e., core teachers) did not share successes.
Socialization	Interacting and communicating with peers; need addressed in student's IEP.
Spencer	Parent's only child; 19-year-old high schooler with ASD.
Strength-Based Instruction	How the agriculture teacher used student's strengths and prior experiences to modify instruction and promote student success.
Teacher-to-Parent Contact	Consistent and positive contact initiated by agriculture teacher with parent; perceived other teachers (i.e., core teachers) as poor communicators.

Transferable Knowledge	Student took greenhouse and floral instruction from agriculture classes and actively applied knowledge to work at the family greenhouse business; career-readiness.
Trust	What parent feels toward Ms. Laura.
Working the Cash Register	Area of success for student in school and in front of peers; task performed by student at home and school.

REFERENCES

- Advance CTE. (2022). *Making good on the promise: Improving equity and access to quality CTE programs for students with disabilities*.
<https://careertech.org/resource/making-good-on-the-promise-improving-equity-and-access-to-quality-cte-programs-for-students-with-disabilities/>
- Advance CTE. (2023). *About*. <https://careertech.org/about/>
- Americans with Disabilities Act (ADA) of 1990, 42 U.S.C § 12101 et seq. (1990).
<https://www.ada.gov/pubs/adastatute08.htm>
- Barajas, G. (2021). *Playing the game: A case study of latinx leaders in an agricultural youth organization* (Publication No. 56) [Master's thesis, University of Kentucky]. Uknowledge.
- Baumer, N., & Frueh, J. (2021, November 23). *What is neurodiversity?* Harvard Health Publishing. <https://www.health.harvard.edu/blog/what-is-neurodiversity-202111232645>
- Bernadkin, K. (2018). Wow: The big difference a tiny toy can make. *ASHA Leader*, 23(4), 44–46. <https://doi-org.ezproxy.uky.edu/10.1044/leader.HYTT.23042018.44>
- Bernard, H. R., & Ryan, G. W. (2010). *Analyzing qualitative data: Systematic approaches*. SAGE Publications, Inc.

- Biagiante, B., Conelea, C. A., Francis, S. M., Jacob, S., & Tseng, A. (2020). Social cognitive interventions for adolescents with autism spectrum disorders: A systematic review. *Journal of Affective Disorders, 274*(2020), 199-204.
<https://doi-org.ezproxy.uky.edu/10.1016/j.jad.2020.05.134>
- Blenner, S., Reddy, A., & Augustyn, M. (2011). Diagnosis and management of autism in childhood. *BMJ: British Medical Journal, 343*(7829), 894–899.
<http://www.jstor.org/stable/23052223>
- Bos, J., & Stokes, M. A. (2018). Cognitive empathy moderates the relationship between affective empathy and wellbeing in adolescents with autism spectrum disorder. *European Journal of Developmental Psychology, 16*(4), 433-446.
<https://doi.org/10.1080/17405629.2018.1444987>
- Bos, M. C. M., & Peijen, R. (2021). Brief report: The benefits of an employer-based work-experience program for participants with ASD. *Journal of Autism and Developmental Disorders, 52*(2), 890-896. <https://doi-org.ezproxy.uky.edu/10.1007/s10803-021-04976-z>
- Boutot, E. A. (2017). *Autism spectrum disorder: Foundations, characteristics, and effective strategies* (2nd ed.). Pearson Education, Inc.
- Bowling, A. M., & Ball, A. L. (2020). Supporting students' physiological needs and motivation within school based agricultural education programs: A mixed methods study. *Journal of Agricultural Education, 61*(2), 206–221.
<https://doi.org/10.5032/jae.2020.02206>

- Cameron, E. (2012). New geographies of story and storytelling. *Progress in Human Geography*, 36(5), 573-592. <http://phg.sagepub.com/content/36/5/573>
- Centers Disease Control and Prevention. (2020, September 16). *Disability and health overview*. <https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html>
- Centers for Disease Control and Prevention (2022, March 28). *Signs and symptoms of autism spectrum disorder*. <https://www.cdc.gov/ncbddd/autism/signs.html>
- Cherlyan, C., Shevchuk-Hill, S., Riccio, A., Vincent, J., Kapp, S. K., Cage, E., Dwyer, P., Kofner, B., Attwood, H., & Gillespie-Lynch, K. (2021). Exploring the career motivations, strengths, and challenges of autistic and non-autistic university students: Insights from a participatory study. *Frontiers in Psychology*, 12(719827). <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.719827/full>
- Cope, M. (2010). *Key methods in geography* (N. Clifford & G. Valentine, Eds.). SAGE Publications, Inc.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications, Inc.
- Crosby, A. (1981). *A critical look: The philosophical foundations of experiential education*. In T.A. Loeffler, D. Mitten, & K. Warren (Eds.), *Theory & Practice of Experiential Education*. Association for Experiential Education.
- Dewey, J. (1938). *Experience and education*. New York: Macmillan.

- Dieterich, C. A., & Smith, K. J. (2015). The impact of special education law on career and technical education. *American Secondary Education*, 43(3), 60–72.
<http://www.jstor.org/stable/43694218>
- Epstein, J. L. (1986). Parents' reactions to teacher practices of parent involvement. *The Elementary School Journal*, 86(3), 277-294. <http://www.jstor.com/stable/1001545>
- Fallon, M., & Zhang, J. (2013). Inclusive collaboration with families of children with autism spectrum disorders (ASD): Perceptions of families, pre-service and in-service level teachers. *The Journal of Educational Thought (JET) / Revue de La Pensée Éducative*, 46(1), 45–62. <http://www.jstor.org/stable/42940532>
- Fleischer, D. Z., & Zames, F. (2011). Education: Integration in the least restrictive environment. In *The Disability Rights Movement: From Charity to Confrontation* (pp. 184–199). Temple University Press.
<http://www.jstor.org/stable/j.ctt14bt7kv.19>
- Fong, C. J., Taylor, J., Berdyeva, A., McClelland, A. M., Murphy, K. M., & Westbrook, J. D. (2021). Interventions for improving employment outcomes for persons with autism spectrum disorders: A systematic review update. *Campbell Systematic Reviews*, 17, e1185. <https://doi.org/10.1002/cl2.1185>
- Glynne-Owen, R. (2010). Early intervention and autism: The impact of positivism and the call for change. *International Journal of Children's Rights*, 18(2010), 405-416. <https://doi.org/10.1163/157181810X497431>

- Gobbo, K., Shmulsky, S., & Bower, M. (2018). Strategies for teaching STEM subjects to college students with autism spectrum disorder. *Journal of College Science Teaching*, 47(6), 12–17. <http://www.jstor.org/stable/44840695>
- Gottfried, M. A., & Plasman, J. S. (2018). Linking the timing of career and technical education coursetaking with high school dropout and college-going behavior. *American Educational Research Journal*, 55(2), 325–361. <http://www.jstor.org/stable/26643541>
- Grandin, T. (2006). Perspectives on education from a person on the autism spectrum. *Educational Horizons*, 84(4), 229–234. <http://www.jstor.org/stable/42923663>
- Grandin, T., & Moore, D. (2022). *The loving push: A guide to successfully prepare spectrum kids for adulthood*. Future Horizons, Inc.
- Gunn, K. C. M., & Delafield-Butt, J. T. (2016). Teaching children with autism spectrum disorder with restricted interests: A review of evidence for best practice. *Review of Educational Research*, 86(2), 408–430. <http://www.jstor.org/stable/24752859>
- Hall, M. C. (2019). Critical disability theory. *The Stanford Encyclopedia of Philosophy*, W(2019), 1-27. <https://plato.stanford.edu/entries/disability-critical/>
- Hickcox, L. K. (2002). Personalizing teaching through experiential learning. *College Teaching*, 50(4), 123–128. <http://www.jstor.org/stable/27559107>
- Higashida, N. (2013). *The reason I jump* (D. Mitchell & K. Yoshida). Random House. (Original work published 2007)

- Hillman, C. B., Lerman, D. C., & Kosel, M. L. (2021). Discrete-trial training performance of behavior interventionists with autism spectrum disorder: A systematic replication and extension. *Journal of Applied Behavior Analysis*, 54(1), 374-388. <https://onlinelibrary-wiley-com.ezproxy.uky.edu/doi/full/10.1002/jaba.755>
- Hong, E. R., Ganz, J. B., Morin, K., Davis, J. L., Ninci, J., Neely, L., & Boles, M. B. (2017). Functional living skills and adolescents and adults with autism spectrum disorder: A meta-analysis. *Education and Training in Autism and Developmental Disabilities*, 52(3), 268–279. <https://www.jstor.org/stable/26420399>
- Hume, K., Odom, S. L., Steinbrenner, J. R., DaWalt, L. S., Hall, L. J., Kraemer, B., Tomaszewski, B., Brum, C., Szidon, K., & Bolt, D. M. (2022). Efficacy of a school-based comprehensive intervention program for adolescents with autism. *Exceptional Children*, 88(2), 223–240. <https://doi-org.ezproxy.uky.edu/10.1177/00144029211062589>
- Hurlbutt, K., & Chalmers, L. (2004). Employment and adults with asperger syndrome. *Focus on Autism and Other Developmental Disabilities*, 19(4), 215-222. <https://doi.org/10.1177/10883576040190040301>
- Hutchins, S. D. (2015). Seeds of independence. *ASHA Leader*, 20(4), 24-26.
- Individuals with Disabilities Education Act (IDEA), 20 U.S.C. § 1400 (2004).
- Ke, F., Whalon, K., & Yun, J. (2018). Social skill interventions for youth and adults with autism spectrum disorder: A systematic review. *Review of Educational Research*, 88(1), 3–42. <http://www.jstor.org/stable/44667692>

- King, L. (Executive Producer). (2022, September 19). Temple grandin on agricultural education (No. 1) [Audio podcast episode]. In Keepin' It Rural. Keepin' It Rural Girls Community. <https://sites.libsyn.com/431361/kir-1-temple-grandin-on-agricultural-education>
- Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing* (2nd ed.). SAGE Publications, Inc.
- LaBarbera, R. (2017). A comparison of teacher and caregiver perspectives of collaboration in the education of students with autism spectrum disorders. *Teacher Education Quarterly*, 44(3), 35–56.
<https://www.jstor.org/stable/90010902>
- Lee, N. R., McQuaid, G. A., Grosman, H. E., Jayaram, S., & Wallace, G.L. (2022). Vocational outcomes in ASD: An examination of work readiness skills as well as barriers and facilitators to employment identified by autistic adults. *Journal of Autism and Developmental Disorders*, (2022). <https://doi.org/10.1007/s10803-022-05804-8>
- Lester, J. N., & Paulus, T. M. (2012). Performative acts of autism. *Discourse & Society*, 23(3), 259-273. <https://www.jstor.org/stable/43496373>
- Levy, J., & Dunsmuir, S. (2020). Lego therapy: Building social skills for adolescents with an autism spectrum disorder. *Educational & Child Psychology*, 37(1), 58-83.
<https://doi.org/10.53841/bpsecp.2020.37.1.58>

McKenney, E. L. W., Stachniak, C., Albright, J., Jewell, J. D., & Dorencz, J. M. (2016).

Defining success for students with autism spectrum disorder: Social academic behavior in secondary general education settings. *Education and Training in Autism and Developmental Disabilities*, 51(3), 318–327.

<http://www.jstor.org/stable/24827527>

Meekosha, H., & Shuttleworth, R. (2009). What's so 'critical' about critical disability studies? *Australian Journal of Human Rights*, 15(1), 47-75.

https://www.researchgate.net/publication/258919369_What's_So_Critical_About_Critical_Disability_Studies

Miller, W. L., & Crabtree, B. F. (1999). *Doing qualitative research* (2nd ed.) (B.F. Crabtree & W.L. Miller, Eds.). SAGE Publications, Inc.

Nasamran, A., Witmer, S. E., & Los, J. E. (2017). Exploring predictors of postsecondary outcomes for students with autism spectrum disorder. *Education and Training in Autism and Developmental Disabilities*, 52(4), 343–356.

<https://www.jstor.org/stable/26420409>

National Association of Agricultural Educators. (n.d.). *What is agricultural education?*

<https://www.naae.org/whatisaged/>

National Center for Education Statistics. (2023). *Students with disabilities*. Condition of Education. U.S. Department of Education, Institute of Education Sciences.

<https://nces.ed.gov/programs/coe/indicator/cgg>

National FFA Organization. (n.d.). *Agricultural education: About FFA*.

<https://www.ffa.org/agricultural-education/#:~:text=Agricultural%20education%20first%20became%20a,states%20and%20three%20U.%20S.%20territories>

National Institute of Neurological Disorders and Stroke. (2023, December 23). *Autism*

spectrum disorder. <https://www.ninds.nih.gov/health-information/disorders/autism-spectrum-disorder#top>

Pellicano, L., Mandy, W., Bolte, S., Stahmer, A., Taylor, J. L., & Mandell, D. S. (2018).

A new era for autism research, and for our journal. *Autism*, 22(2), 82-83.

<https://journals.sagepub.com/doi/epub/10.1177/1362361317748556>

Ramage, R. (2021). *The perceived importance and ability of secondary agricultural education teachers regarding accommodating students with exceptionalities: A mixed methods study* (Publication No. 5271) [Master's thesis, Louisiana State University]. LSU Digital Commons.

Root, J. R., Cox, S. K., & McConomy, M. A. (2022). Teacher-implemented modified

schema-based instruction with middle-grade students with autism and intellectual

disability. *Research and Practice for Persons with Severe Disabilities*, 47(1), 40-

56. <https://doi.org/10.1177/15407969221076147>

Roux, A. M., Rast, J. E., Anderson K., & Shattuck, P. (2017). *National autism indicators report: Developmental disability services and outcomes in adulthood*.

Philadelphia, PA: Life Course Outcomes Research Program, A.J. Drexel Autism Institute, Drexel University.

- Saldana, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). SAGE Publications, Inc.
- Savino, R., Carotenuto, M., Polito, A. N., Noia, S. D., Albenzio, M., Scarinci, A., Ambrosi, A., Sessa, F., Tartaglia, N., & Messina, G. (2020). Analyzing the potential biological determinants of autism spectrum disorder: From neuroinflammation to the kynurenine pathway. *Brain Sciences*, *10*(9), 631. <https://doi.org/10.3390/brainsci10090631>
- Shattuck, P. T., Narendorf, S. C., Cooper, B., Sterzing, P. R., Wagner, M., & Taylor, J. L. (2012). Postsecondary education and employment among youth with an autism spectrum disorder. *Pediatrics*, *129*(6), 1042–1049. <https://doi.org/10.1542/peds.2011-2864>
- Stair, K. S., Blackburn, J. J., Bunch, J. C., Blanchard, L., Cater, M., & Fox, J. (2016). Perceptions and educational strategies of Louisiana agricultural education teachers when working with students with special needs. *Journal of Youth Development*, *11*(01). <https://jyd.pitt.edu/ojs/jyd/article/view/433>
- Stake, R.E. (1995). *The art of case study research*. Sage Publications, Inc.
- Standifer, S. (2009). *Adult autism and employment: A guide for vocational rehabilitation professionals*. University of Missouri

- Sung, C., Connor, A., Chen, J., Lin, C., Kuo, H., & Chun, J. (2019). Development, feasibility, and preliminary efficacy of an employment-related social skills intervention for young adults with high-functioning autism. *Autism: The International Journal of Research & Practice*, 23(6), 1542-1553. <https://doi.org/10.1177/1362361318801345>
- Underwood, J. (2018). Defining the least restrictive environment. *The Phi Delta Kappan*, 100(3), 66–67. <https://www.jstor.org/stable/26552470>
- U.S. Department of Education. (2019, August 30). *A guide to the individualized education program*. <https://www2.ed.gov/parents/needs/speced/iepguide/index.html>
- U.S. Department of Education. (2024, February 16). *A history of the Individuals with Disabilities Education Act*. <https://sites.ed.gov/idea/IDEA-History>
- U.S. Government Accountability Office. (2016). *Youth with autism: Roundtable views of services needed during the transition into adulthood*, GAO-17-109. <https://www.gao.gov/products/GAO-17-109>
- Warren, K., Mitten, D. S., & Loeffler, T. A. (Eds.). (2008). *Theory & practice of experiential education*. (pp. 9). Boulder, Colorado: Association for Experiential Education.
- Wei, X., Yu, J. W., Wagner, M., Hudson, L., Roux, A. M., Shattuck, P., & Blackorby, J. (2018). Job searching, job duration and job loss among young adults with autism spectrum disorder. *Journal of Vocational Rehabilitation*, 48(1), 1–10. <https://doi.org.ezproxy.uky.edu/10.3233/JVR-170922>

Weitlauf, A. S., Sathe, N. A., McPheeters, M. L., & Warren, Z. (2017). *Interventions targeting sensory challenges in children with autism spectrum disorder—An update* (AHRQ Publication No. 17-EHC004-EF). U.S. Department of Health and Human Services. <https://effectivehealthcare.ahrq.gov/topics/preoperative-testing/research>

World Health Organization. (n.d.). *Adolescent health*.
https://www.who.int/health-topics/adolescent-health#tab=tab_1

Worsham, L., & Olson, G. A. (2012). Temple Grandin, translator: Sounding autism, seeing animals, making a difference. *JAC*, 32(1/2), 11–56.
<http://www.jstor.org/stable/41709676>

Yin, R. K. (2018). *Case study research and applications: Design and methods*. Sage Publications, Inc.

Zapruder, M. (2023). *Story of a poem: A memoir*. Unnamed Press.

Zhang, K.C., & Choo, A. (2019). Autism interventions for youth: Restorative farm therapy in Singapore. *Support for Learning*, 34(1), 112-120.
<https://doi.org/10.1111/1467-9604.12238>

VITA

Grace Charlene Miller

Education

B.S. University of Missouri–Columbia, *Columbia, MO*

2022 Agricultural Education

Professional Experience

Graduate Teaching Assistant | 2022-2024

University of Kentucky, *Lexington, KY*

Workshop Presenter | 2023

National Association of Agricultural Educators, *Phoenix, AZ*

Agricultural Education Student Teaching Intern | 2022

Rolla Technical Institute, *Rolla, MO*

Office Intern & Executive in Residence Intern, CAFNR Advancement | 2019-2021

University of Missouri, College of Agriculture, Food and Natural Resources,
Columbia, MO

Seed Variety Testing Intern | 2021

University of Missouri, Bradford Research Farm, *Columbia, MO*