Serving students with moderate to severe disabilities: Perspectives of career and technical education teachers in Mississippi

By

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A Dissertation
Submitted to the Faculty of Mississippi State University in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Curriculum and Instruction in the Department of Curriculum, Instruction, and Special Education

Mississippi State, Mississippi
August 2019
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Positive postsecondary outcomes have become a social issue as the gap between typical peers and students with disabilities grows for employment or postsecondary education. Using evidenced-based instruction strategies to create effective transition instruction has become a required and successful means of improving postsecondary outcomes for individuals with moderate to severe disabilities. The career and technical programs have been identified as an environment that currently implements evidence-based practices that have shown promise of improving instruction. However, participation is limited among individuals with moderate to severe disabilities in the career and technical programs. Through this study the researcher sought to understand how career and technical educators perceive their programs as appropriate learning environments for students with moderate to severe disabilities. A mixed-methods design was used to gather perspectives of career and technical education teachers. A survey was given to ask career and technical education teachers about their personal perspectives, current dispositions, and the perceived barriers for including students with moderate to severe disabilities in their career and technical classroom. Open-ended questions were included at the end of the survey to better understand or identify new perceptions, dispositions, or barriers of career and technical education teachers toward teaching students with moderate to severe disabilities. An analysis of
the responses determined that although there are concerns and lack of resources, the overall perspective of career and technical education teachers is positive. According to the results of this study, career and technical education teachers in Mississippi see their classrooms as beneficial and as an appropriate learning environment for students with moderate to severe disabilities.
DEDICATION

Too many people have supported me through this process to dedicate this dissertation to one person. My family: Matt, Jennie Carlyle, Lynnlee Kate, as well as my Mom and Dad for support and encouragement. But also, to Henry and all the other the students I have taught during my teaching career who have shown me there is so much more to work toward.
ACKNOWLEDGEMENTS

Dr. Sandy Devlin has supported me and guided me through this process. She has been an excellent model of teaching and professional growth since I began in the special education program as an undergraduate student. I am thankful for all of her help and assistance. Dr. Kent Coffey has also been a great support. He too has provided feedback and support to guide me through this process.

I am also thankful for Dr. Sean Owen, who has provided me feedback and has been my resource for guiding me through the career and technical education side of my research. Dr. Deborah Prince has provided invaluable feedback in the research process; and Dr. Missy Hopper who has not only provided feedback but always positive and encouraging.

To each of you, I thank you for your time, your willingness, and your patience.

Thank you to all the rest of the faculty in the College of Education as they supported me, pushed me, and encouraged me to keep going and not give up.
TABLE OF CONTENTS

DEDICATION ........................................................................................................................................... ii

ACKNOWLEDGEMENTS ......................................................................................................................... iii

LIST OF TABLES ...................................................................................................................................... viii

LIST OF FIGURES ................................................................................................................................. ix

CHAPTER

I. INTRODUCTION ..................................................................................................................................... 1

   Statement of the Problem ................................................................. 1
   Nationwide Employment ................................................................. 2
   Employment in the State of Mississippi ........................................... 3
   Expectations for Transition ............................................................... 4
   Comprehensive Transition Planning .............................................. 7
   Purpose of This Study ................................................................. 11
   Significance .................................................................................. 12
   Research Questions ..................................................................... 12
   Delimitations ............................................................................... 13
   Theoretical Framework ................................................................. 13
   Definition of Terms ..................................................................... 14

II. LITERATURE REVIEW ....................................................................................................................... 18

   Postsecondary Transition .......................................................... 18
   Transition Planning ................................................................. 20
   A Response to Creating a Transition-Based Education .............. 25
   Student-Focused Planning ........................................................ 25
   IEP Development ..................................................................... 26
   Planning Strategies ................................................................. 27
   Student Participation ............................................................... 28
   Student Development ............................................................... 29
   Assessment ................................................................................. 29
   Academic Skills ....................................................................... 30
   Life, Social, and Emotional Skills ............................................ 31
   Employment and Occupational Skills .................................... 32
   Student Supports ...................................................................... 32
   Instructional Content ............................................................... 33
III. Methodology ...................................................................................... 78
# IV. FINDINGS

Introduction .................................................................................. 87
Overview of the Findings .............................................................. 88
Description of the Sample .............................................................. 89
   Teaching experience ................................................................... 89
Degree and Certification ................................................................ 90
   Highest earned degree .............................................................. 90
   Route to teaching certification .................................................. 91
Classroom environment ............................................................... 92
Eligibility categories ...................................................................... 95
Socioeconomic status ................................................................. 96
Quantitative Data Analysis ........................................................... 97
Personal Perceptions ..................................................................... 97
Dispositions .................................................................................. 108
   Collaboration ........................................................................... 108
   Professional development ....................................................... 110
   Interagency collaboration including community-based instruction .............................................. 111
Perceived Barriers ....................................................................... 116
Analysis of Reflective Comments ................................................ 121
Personal Perceptions ..................................................................... 121
Needs of Career and Technical Teachers to Increase Appropriateness .................................................. 123
Perceived Barriers Impacting Success in Career and Technical Education Classrooms .................................................. 124

# V. CONCLUSION

An Overview of the Study ............................................................. 127
Discussion of the Findings ............................................................ 129
Career and Technical Education Teachers Feel Their Classroom is Beneficial .................................................. 129
Evidence-Based Practices Exist in the Career and Technical Education Classroom .............................................. 130
   Community-based instruction/interagency collaboration ................................................................. 130
   A collaborative framework ........................................................ 131
LIST OF TABLES

1  Comparison of Mississippi and National Results for Indicator 13 .........................23
2  Comparison of Mississippi and National Results of Indicator 14 .........................24
3  Research questions, survey items, method of analysis ........................................86
4  Years of Teaching Experience .............................................................................90
5  Highest Earned Degree .......................................................................................91
6  Route to Teaching Certification ...........................................................................92
7  Career and Technical Pathways .........................................................................93
8  Class Size ...........................................................................................................94
9  Students with Moderate to Severe Disabilities ..................................................95
10 Eligibility Category ...........................................................................................96
11 Socioeconomic Status .......................................................................................97
12 Personal Perceptions .........................................................................................104
13 Personal Perceptions ........................................................................................107
14 Percentage of Responses for Frequency of Disposition ...................................113
15 Dispositions .......................................................................................................116
16 Percent of Responses for Perceived Barriers Impacting Inclusion of Students with Moderate to Severe Disabilities .................................................................119
17 Mean and Standard Deviation for Frequency of Disposition ...............................120
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Taxonomy for Transition Programming 2.0</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>Percentage of Respondents that Believe Inclusion is CTE is Beneficial</td>
<td>99</td>
</tr>
<tr>
<td>3</td>
<td>Perception of Needed Resources</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Perception of Administrative Support</td>
<td>101</td>
</tr>
<tr>
<td>5</td>
<td>Perception of Support from Special Education Teachers</td>
<td>101</td>
</tr>
<tr>
<td>6</td>
<td>Negative perceptions toward CTE inclusion</td>
<td>102</td>
</tr>
<tr>
<td>7</td>
<td>Current Collaborative Practices</td>
<td>109</td>
</tr>
<tr>
<td>8</td>
<td>Frequency of Participating in Professional Development</td>
<td>111</td>
</tr>
<tr>
<td>9</td>
<td>Frequency of Interagency Collaboration and Community Based Instruction</td>
<td>112</td>
</tr>
<tr>
<td>10</td>
<td>Perceived Barriers toward Inclusion of Students with Moderate to Severe Disabilities.</td>
<td>117</td>
</tr>
<tr>
<td>11</td>
<td>Frequency of Perceptions of Appropriateness of the current CTE classroom.</td>
<td>122</td>
</tr>
<tr>
<td>12</td>
<td>Frequency of needs to increase appropriateness</td>
<td>124</td>
</tr>
<tr>
<td>13</td>
<td>Frequency of barriers mentioned in open ended responses</td>
<td>126</td>
</tr>
<tr>
<td>14</td>
<td>Frequency participants chose Neither agree or Disagree</td>
<td>135</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Statement of the Problem

The basic principle of education is to develop students who are prepared for life (Callahan, Butterworth, Boone, Condon, & Luecking, 2014). Success of this preparation for school-age students is measured by many variables: grade point average, scholarship offers, college acceptances, or employment opportunities. “The goal for America’s educational system is clear: Every student should graduate from high school ready for college or a career” (U.S. Department of Education, 2010, p.1). However, “every” is not inclusive for most school systems in the state of Mississippi. Nationally, approximately 13% of public-school students are served through special education in the United States (National Center for Education Statistics, 2018). Of that 13%, 11% are receiving less than a high school diploma and 14% are being served outside of the general education classroom for no less than 60% of the school day (National Center for Education Statistics, 2018). Mississippi serves approximately 12% of public school students in special education, with 13.5% of those students spending more than 60% of their instructional time outside of the general education classroom (Mississippi Department of Education, 2018b; U.S. Department of Education, 2018). Exclusion and segregation are still evident in public education today.

According to the most recent data published by Mississippi Department of Education (2018), the Bureau of Labor and Statistics (2017), the National Conference of State legislature (2017), individuals with moderate to severe disabilities (MSDs) are not successfully leaving high
school and participating in the “meaningful opportunities,” such as gaining employment or furthering their education. The U.S. Department of Education (2010) outlines expectations of post-secondary transition in its article *College and Career Ready Student* (Bureau of Labor and Statistics, 2017; National Conference of State Legislatures, 2017; Newman et al., 2011). This study will find solutions to close the gap between students with moderate to severe disabilities and their typical peers in successful post-secondary outcomes.

**Nationwide Employment**

According to the National Conference of State Legislatures (2017), the national unemployment rate averaged 4.86% during 2016, lower than the reported average of 9.25% in 2009. Nationally, employment is on the rise, indicating a positive trend in the success of preparing students for postsecondary college or career. One suggested factor to this increase in the employment rates would be graduation rate. The U.S. Department of Education has reported rising graduation rates over the last three years. The national 2015-2016 high school graduation rate was 84%; the highest since the implementation of the new formulas over five years ago (U.S. Department of Education, 2018; National Center for Education Statistics, 2018). Although the above unemployment data appears to show that schools are accomplishing the intent of education, looking closer at the data may identify a population of students that are not meeting these goals. Students who have been identified as having a MSD and qualify for services under the Individuals with Disabilities Education Act (2004) are among those who are not achieving the goals previously set for all students by the Elementary and Secondary Education Act (1965). Nationally, the unemployment rate for individuals with a disability is approximately 8.9% according to the Bureau of Labor Statistics (2019).
**Employment in the State of Mississippi**

Compared to the national data, in 2018, 75.3% of Mississippi population had an average was employed (Cornell University, 2019). Like the national employment rates, Mississippi’s employment rates are also on an upward trend. However, a closer look at the data will show a different trend for individuals with disabilities. In the Disability Statistics Reports published by Cornell University (2019), 28.8% of Mississippi’s population of individuals with disabilities is employed. Rates of employment of individuals with disabilities has increased since 2010, with 28.6% of individuals with disabilities were employed, however, the unemployment rates of individuals with disabilities was more than 14 times higher than the rates of individuals without disabilities (Cornell University, 2019).

In a positive finding for Mississippi, the overall graduation rates have increased by 8.6% since 2012 to a rate of 84% (Mississippi Department of Education, 2018). According to the most recent accountability report published by the Mississippi Department of Education, the Mississippi graduation rate of students with disabilities has increased from 27.5% to 34.7%, significantly less than that of their typical peers with a graduation rate of 84% (Mississippi Department of Education, 2018b).

According to the available information from the Bureau of Labor and Statistics (2017) and the National Conference of State Legislatures (2017), both employment and graduation rates are increasing nationally. In Mississippi, although the overall employment and graduation rate is on the rise (Mississippi Department of Education, 2017; Mississippi Department of Employability Security, 2018), the employment for students with disabilities is declining (Mississippi Department of Employment Security, 2018). Although not on the rise, the unemployment rate of individuals with disabilities is significantly higher than the unemployment rates of individuals without disabilities.
Expectations for Transition

The preparation of students to be ready to continue their education or join the workforce is available and required for all students, with or without a disability. College and career readiness has been clearly stated as the primary focus of education after the most recent revisions of educational laws. Beginning in 1965 with the establishment of the Elementary and Secondary Education Act (ESEA), a right to equal educational opportunities has been legally mandated. The Individuals with Disability Education Act (1990), originally the Education for All Handicapped Children Act (1975), provided a free appropriate public education to students with disabilities, including addressing transition services by age 16. Reauthorization of Individuals with Disabilities Education Act (IDEA) in 2004 required that instruction include evidence-based practices to improving the free appropriate public education for students with disabilities (Bicehouse & Faieta, 2017). While IDEA (2004) provided educational protection, in 1990, the Americans with Disability Act (ADA) expanded protection into society by prohibiting discrimination against individuals with disabilities in communities, specifically employment (Bicehouse & Faieta, 2017). Through the reauthorizations of Elementary and Secondary Education Act (1965), No Child Left Behind (2001) required accountability for all students’ progress, requiring higher expectations with better supports and services regardless of student circumstance. Since 2007, significant progress has been made toward aligning the standards for high school completion and expectations for being either college or career ready (National Conference of State Legislature, 2017). The reauthorization of No Child Left Behind (2001) in 2015 led to the establishment of Every Student Succeeds Act (ESSA, 2015). With this new legislation, ESSA calls for higher quality education and requires preparation for success after high school for either college or a career (Sharp, 2016; U.S. Department of Education, 2017).
Just as the goal of education for typical peers is to be college or career ready, the goal for students with disabilities is the same. Hoover (2016) stated that “the goal for students with disabilities as they leave high school is that they will go to college, be able to find employment in the real world, and/or have the adaptive skills necessary to be as independent as possible” (p. 21). Although the expectations of educating students with disabilities are set clearly through legislation, the graduation rates and unemployment rates show that those expectations are not being met.

Not only are graduates lagging in employment, Newman and her colleagues (2011) discussed the gap between typical peers and students with disabilities in the areas of postsecondary education and independent living. Employment is one of the components of postsecondary living that provides the basic resources for independent living.

In a 2011 report from the National Longitudinal Transition Study-2 (NLTS-2), students with disabilities were less likely than their typical peers to enroll in any type of postsecondary education program, but 80% of them still seek postsecondary education as their primary goal upon completion of high school (Newman et al., 2011). After review of the NLTS-2, Newman and colleagues (2011) also reported approximately 55% of students with disabilities enrolled in any type of postsecondary school, compared to 62% of typical peers enrolling in some form of postsecondary education. Of the 55% of students who pursued further education, 37% of students enrolled in a two-year or community college, 28% enrolled in a vocational/technical school, and 15% enrolled in a four-year college (Newman et al., 2011). Although the number of students with disabilities who are enrolling in postsecondary education is increasing slowly, the gap between students with disabilities and their typical peers is still significant.

Reaching the milestone of transition into higher academics or employment for students with disabilities is not only about overcoming obstacles, but also about utilizing resources. The
“access to effective and comprehensive instruction” during the transition planning and implementation is “pivotal” (Karpur, Brewer, & Golden, 2014, p.119).

In addition to legislation providing access to the general curriculum, the school-to-work transition policy has helped evolve transition into a long-term support for students entering employment (McDonnell & Hardman, 2010). The Rehabilitation Act of 1973 provides funding for helping individuals with disabilities gain employment. In Section 504 of this act, there is a focus on the specific needs for development of vocational skills through a comprehensive and coordinated program to be used in an employment setting (McDonnell & Hardman, 2010). This act was amended in 1998 to enhance community involvement and increase student outcomes from school to post-school activities including postsecondary education, vocational training, integrated employment, continuing and adult education, adult services, independent living, and community participation (McDonnell & Hardman, 2010). The Americans with Disabilities Act of 1990 further mandates accessibility in the workplace for individuals with disabilities (McDonnell & Hardman, 2010). To provide more efficient services, the Workforce Investment Act of 1998 provides a more universal access to transition and work-based services and accommodations (McDonnell & Hardman, 2010). A first step in increasing access to effective instruction and improving outcomes of student transitions into postsecondary life is to plan and implement effective transition plans that teach the skills needed to function as a citizen with full community participation. The combined initiative by the U.S. Department of Education and the U.S. Department of Labor, the School-to-Work Opportunities Act of 1994 established a framework for offering “opportunities to all students to participate in a performance-based education and training program that will enable them to earn portable credits, prepare for first jobs in high-skill, high wage careers and increase their opportunities for further education” (P.L. 103-239, Sec. 3[a]). Career awareness, community experience, inclusion in the general
education, interagency collaboration, occupational courses, paid employment, work experience, vocational education, and work-study are a few of the identified predictors for post-school success published by the National Secondary Transition Technical Assistance Center (NSTTAC; Test et al., 2009). These predictors align with the areas in which students with MSDs struggle as they transition from high school to a postsecondary education or career. Therefore, careful consideration of each of these areas should be included in the development of comprehensive transition plans.

**Comprehensive transition planning.** Transition for students with disabilities is defined as the movement from secondary education to a postsecondary academic education, career and technical education, or career. Transition services are defined by IDEA (2004) as coordinated activities that prepare students for the move from secondary to postsecondary life choices through a “results oriented process” (IDEA, 2004, p.12). Although most students transition through this process in a fairly smooth manner, students with disabilities typically have more difficulty finding employment or employment with pay above minimum wage (Southward & Kyzar, 2017), significantly lower performance in community college (Garrison-Wade & Lehmann, 2009), and opportunities for community involvement (Carter et al., 2008). The principle of Free Appropriate Public Education (FAPE) provided by IDEA (2004) outlines that this coordinated set of activities of a transition plan must include (a) current and future transition goals, (b) previous transition assessments, (c) instruction and accommodations necessary for achieving those goals, and (d) interagency collaboration to accomplish those goals.

The goals included on high-quality transition plans are derived from both the *College and Career-Ready Standards*, (CCRS) adopted by Mississippi in 2015 (MDE, 2018) as well as input from key stakeholders (e.g., student, parent, teacher). The focus of the CCRS is to prepare students academically to continue their education at a university, community college, or
workforce training program, or to transition directly from high school to competitive employment (National Conference of State Legislatures, 2017). As a part of transition planning, students are required to complete graduation audits, which highlight student participation in college entrance exams (e.g., ACT), applications completed for college and scholarship, and career assessments completed. To address these requirements, appointed school staff (e.g., school counselor, special education teacher) are responsible for monitoring completion of these audits for all students, including students with disabilities. When planning for students with disabilities and their transition into postsecondary life, research has shown teachers, both general and special educators, are less knowledgeable about the specific components of a high-quality transition plan and the various pathways for accomplishing goals in the domains of employment, independent living, community participation, and recreation/leisure (Benitez, Morningstar, & Frey, 2009; Plotner, Mazzotti, Rose, & Carlson-Britting, 2016).

Paula Kohler, with the help of her colleagues, developed a model for transition planning that has been implemented in education agencies as a method of structuring their transition planning (Kohler & Field, 2003; Kohler, Gothberg, Fowler, & Coyle, 2016; Kohler & Illinois University, 1996). The most recent revision of the model includes student-focused planning, student development, interagency collaboration, family engagement, and program structure as areas of focus in the planning process (Kohler et al., 2016). Kohler’s *Taxonomy for Transition Programming 2.0* will be the framework of components discussed throughout this study (Kohler et al., 2016).

Student-focused planning is the starting point in transition planning. Assessing the student’s abilities, interests, and the available options in that student’s community as a starting point allows for the transition plan to be student-centered. These assessments assist in developing appropriate goals, strategies, supports, and services to meet best the student’s needs. As a result,
there is an increase in the effective development of the student’s individualized education plan (IEP). Participation of the entire multidisciplinary team, including parents and students, is not only a provision of the Individuals with Disability Education Act (2004), but a strategy that supports consistency and generalization of target skills. The IEP is the document that supports the academic, social, emotional, and career and technical education development of students throughout their elementary and secondary education and prepares them for postsecondary life. Providing the supports and services that least restrict a student’s environment is a result of assessment and progress monitoring through instructional practices. A collaborative framework for networking and building relationships among supports, services, and potential employment opportunities is a component that requires strategic planning and delivery. Reflective assessment on the planning, progress, and effectiveness of the transition program is a consistent endeavor. Appropriate resources that match the student’s needs and meet the requirements established by law, policy, and best practice ensure a positive school learning environment.

Supporting teachers and team members who are planning and implementing transition instruction is essential. Providing professional development is a priority for implementing the evidence-based practices that are both supported in research (Mazzotti, Rowe, Simonsen, Boaz, & VanAvery, 2018) and required through legislative mandates (IDEA, 2004). Preparation for implementing transition plans for students with disabilities is often a primary barrier for implementing high-quality transition services (Benitez et al., 2009). Specifically, a lack of professional development and trainings on available resources, financial support for transportation, and flexible schedules for staff have all been barriers to providing evidence-based transition instruction (Pickens & Dymond, 2015).

In a review of teacher perceptions of transition components, Benitez et al. (2009) identified interagency collaboration as the weakest component of transition planning. Teachers
were described as being the least prepared to include and implement this practice. Therefore, this component is a frequently overlooked aspect of a high-quality transition plan. Stakeholders must address the collaborative significance of the school, home, community, and other agencies. Specifically, the inclusion of evidence-based practices, such as community-based instruction, is of the utmost importance for ensuring students meet goals across all four domains of transition (Turnbull, Turnbull, Wehmeyer, & Shogren, 2016). Community-based instruction is an evidence-based strategy for teaching students with MSDs to provide functional skills in the student’s most natural environment to increase success (Hoover, 2016). More specifically, community-based career and technical instruction focuses on skills needed in the workforce (Hoover, 2016). According to Hoover (2016), “community activities fit perfectly into transition planning” (p. 21). Providing students with learning environments that closely resemble those that are set within the goals of transition planning provides students with a more comprehensive foundation of learning and mastering the skills in their postsecondary goals. Providing students with “work-based engagement” (Karpur et al., 2014, p.119) opportunities in the community or in a classroom setting, such as those offered by career and technical education centers, provide students a more appropriate learning environment that could close the gap between employment of individuals with disabilities and their typical peers. Interagency collaboration and community-based workforce training are both primary components of career and technical education and are common resources readily available within a student’s local community. For students with disabilities, secondary career and technical education is underutilized. The National Center for Education Statistics (2008) reported only 18.5% of students with disabilities participate in career and technical education programs. Current data is limited or nonexistent for rural communities, like those found throughout Mississippi.
Employment opportunities for students to connect and network within the community are also limited in some areas of Mississippi. Often, local employer qualifications are not matched with skills taught in secondary school settings for students with MSDs, which limits the available locations and opportunities for teachers to provide community-based career and technical education instruction for their students.

**Purpose of This Study**

Students with MSDs have a history of poor post-school outcomes (Kellums & Morningstar, 2010). While there are many contributing factors, poor transition planning is one of the most frequently associated with not meeting individualized transition goals (Certo et al., 2008). The purpose of this research study is to identify the personal perspectives, dispositions, and perceived barriers of career and technical education teachers on including students with MSDs within public school career and technical education programs. This data from this study will provide insight into creating a more effective and accessible learning environment to implement transition instruction. In previous research, students within this population have not been included, as most research in the body of literature is focused on students with high-incidence disabilities, such as learning disabilities (Wagner, Newman, & Javitus, 2016), disabilities as a whole (Newman, Madaus, & Javitus, 2016), or just one category of intellectual disability and not isolated into mild, moderate, or severe (Bouck & Joshi, 2016).

In an article, Pickens and Dymond (2015) discuss the belief among special education directors that community-based workforce training is “not appropriate for students with challenging behaviors or severe disabilities” (p. 301). Although disheartening, understanding these personal perspectives, dispositions, and perceived barriers for educating students with MSDs is the first step in addressing the challenges and barriers in utilizing career and technical
education programs in high-quality transition planning and instruction. Ultimately, through this study, the researcher seeks to describe the attitudes, dispositions, and perceived barriers toward including students with MSDs into career and technical education programs. Exploration of ideas of increasing positive perspectives and dispositions and reducing perceived barriers will be addressed as they emerge.

**Significance**

The findings of this study are intended to provide a starting point to improve the postsecondary outcomes of students with MSDs. The results of this study show that the perspectives and dispositions of the participating Mississippi career and technical education teacher impact the quality of inclusive education for these students. Allowing teachers to voice their opinions will provide a means of closing the gap of research to practice by identifying areas of weakness that can be addressed. This study will increase understanding of expectations and needs of career and technical education teachers in Mississippi to provide opportunities for positive change toward a more effective learning environment for students with moderate to severe disabilities. Results of this study identified needed implication that will aid in increasing compliance with transitional program structure that has been mandated by current legislation.

**Research Questions**

The research questions in this study sought to identify the perspectives of the career and technical education teachers by exploring the following questions:

1. What are the personal perspectives of Mississippi career and technical education teachers regarding including students with MSDs in their current career and technical education classrooms (e.g., Are career and technical education programs valuable for students with MSDs)?
2. What are the dispositions of Mississippi career and technical education teachers regarding including students with MSDs (e.g., What are the behaviors of career and technical education teachers that currently align with evidence-based practices)?

3. What are the barriers toward including students with MSDs in career and technical education programs perceived by Mississippi career and technical education teachers?

Delimitations

This study was limited to participants who taught in a full-time secondary career and technical education classroom in one of Mississippi’s public high school career and technical education programs. The researcher also only requested perspectives toward a specific population of students with disabilities, those with MSDs.

Theoretical Framework

Ajzen’s (1991) theory of planned behavior directly links attitude and perceived control to behavior. According to this theory, the claim can be made that teacher performance then can be contingent on what they believe and on their perceptions and understanding of their students. Supporting this theory, a moderate correlation was found between the effectiveness of teaching and the perceptions of students with disabilities during Jordan, Glenn, and McGhie-Richmond’s (2010) study of the Supporting Effective Teaching (SET) Project. Through this project, the researchers sought to identify relationships between factors that influenced effective teaching among both general education and special education teachers and to provide development to increase effective teaching practices. Jordan, Swartz, and McGhie-Richmond (2008) mapped the
data she collected from teachers into the theories of epistemological beliefs and found relationships that supported that beliefs and understanding influence teaching style and learning.

The identified relationship between these two variables lays a foundation to explore and begin to understand the perspectives of career and technical education teachers. In this study, the researcher explored teachers’ perspectives, dispositions, and perceived barriers of their current classrooms MSDs.

**Definition of Terms**

*College and Career Readiness* – a multidimensional construct that includes academic and nonacademic factors across three broad areas of academic knowledge, pathway knowledge, and skills for lifelong learning for all students (Morningstar, Lombardi, Fowler, & Test, 2015).

*Disposition* – the behaviors that career and technical education teachers have for including students (providing FAPE) to students with MSD receiving career and technical instruction

*Individuals with Disability Education Improvement Act (IDEA), 2004* – the most recent reauthorization of legislation that outlines the provisions that are available to students with disabilities to be provided a free and appropriate public education through accommodations, modifications, supplementary aids and supports, and related services. IDEA provides educational provisions for students from birth to 21 years of age to support academic, social/emotional, and career and technical education needs of students with disabilities.

*Individualized Education Plan* – a legally binding document that is an outcome-oriented plan to support students’ needs in progression in the general curriculum (Turnbull et al., 2016).
This plan establishes the specific accommodations, modifications, supplementary aids and supports, and related services for individual students.

*Personal Perspectives* – attitudes, thoughts, and feelings associated with providing career and technical education to students with MSDs.

*Transition* – the move from secondary education to gainful employment or continued academic or career and technical postsecondary education.

*Transition Planning* – “coordinated planning, collaboration, and decision-making among school staff, families, and a network of community agencies” (Davies & Beamish, 2009, p. 248).

*Transition Services* – a results-oriented process designed to improve academic and functional achievement as the student moves from school to post-school life. Services are based on the individual student’s needs, strengths, and preferences and include the following areas: postsecondary education, career and technical education, integrated employment, continuing adult education, adult services, independent living, and community participation through instruction, related services, and community experiences (IDEA, 2004; Mississippi Department of Education, 2018a).

*Transition Instruction* – The coordinated set of evidence-based activities that educators use to teach the skills needed to meet transition goals. Examples of activities include appropriate accommodations, tutoring, skills training, preparation for college exams, and community-based instruction (Test, Bartholomew, and Bethune, 2015).

*Moderate Disability* – Includes approximately 10% of individuals with intellectual disabilities. Approximate IQ range is 36-49 (American Psychiatric Association, 2000) and achievement of independent living with moderate levels of support (American Psychiatric Association, 2013).
Severe Disability- Includes approximately 3% of individuals with intellectual disabilities. Approximate IQ range is 20-35 (American Psychiatric Association, 2000) and required daily living assistance with self-care activities and safety supervision (American Psychiatric Association, 2013).

Evidence-Based Practice (EBP) – Instructional strategies that have been implemented into the classroom after being included in the “application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (No Child Left Behind Act, 2001). Evidence is based on a rigorous design of group experimental, single-case, and correlational research that demonstrated a strong record of success for improving outcomes. Design has undergone a systematic review process and adheres to quality indicators related to the specific research design (National Technical Assistance Center on Transition, 2018).

Interagency Collaboration – a “concept that encompasses formal and informal relationships between schools and adult agencies in which resources are shared to achieve common transition goals” (Noonan, Morningstar, & Erickson, 2008, p.133)

Community-Based Instruction (CBI) – planned, purposeful, continuous, and repetitive learning opportunities that occur within the natural “real-world” environment (Snell & Brown, 2011)

Community-Based Career and Technical Education Instruction – like CBI, the community learning opportunities are exclusively focused on workforce skill development (Hoover, 2016; Pickens & Dymond, 2015)

Career and Technical Education (CTE) – school-based instruction that provides organized activities through a multitude of programs that are designed to help students learn the skills to meet their occupational goals by combining academic and career and technical
skills in an applicable setting (Carl D. Perkins Career and Technical Education Improvement Act, 2006)

Perceived Barriers – Issues and/or challenges that are thought to impact the career and technical education classroom from delivering free and appropriate public education to students who have MSDs
CHAPTER II
LITERATURE REVIEW

Postsecondary Transition

“Work is a way of human life in the United States” (Wehman, 2011, p.147). Employment has been identified as “possible for all students and a critical aspect of gaining full citizenship” (Certo et al., 2008, p. 88). Believing that the possibility of all students needing to be employed is the link to creating an environment that gives students opportunities to become full citizens within their communities (Callahan et al., 2014). Even after nearly 40 years of access to free and appropriate public education through the implementation of the Individuals with Disabilities Education Act (2004), Americans with Disabilities Act (1990), and the advancements in technology, exclusion and segregation are still evident through decreasing employment rates among individuals with disabilities (Callahan et al., 2014). Certo et al. (2008) identified the declining rates of employment as a “significant social problem” (p. 87). Among individuals with disabilities, there is a 38-point percentage gap in employment compared to individuals without disabilities (Wehman, 2011). Upon completion of high school, the discrepancy between the rate of employment for students with a disability and their typical peers is “serious” (Kellums & Morningstar, 2010).

The declining social problem that Certo et al. (2008) speak of has been a result of poor transitions of students with disabilities from high school to life after high school. According to Callahan et al. (2014), students with MSDs should be leaving school with paid employment. A
need for an education that is focused on transition was a response to declining post-school outcomes in 2003 (Kohler & Field, 2003; Kohler et al., 2016).

Moving from high school to a postsecondary career or education is a transition that all students with or without disabilities experience. However, this move from being a student to becoming an adult has not shown positive outcomes at the same level from students with MSDs (Southward & Kyzar, 2017; Wehman, Chan, Ditchman, & Kang, 2014). According to the national goal for the education system, students are to be “college and career ready” at the time of high school graduation (U.S. Department of Education, 2010). However, research shows that not all students are successfully prepared for college or career; students with MSDs are reported to have lower success rates in gaining and maintaining employment, (Kellums & Morningstar, 2010; Southward & Kyzar, 2017) and continuing to postsecondary education (Garrison-Wade & Lehmann, 2009). For students to be prepared for college or a career, “meaningful opportunities” for learning must be provided to prepare students for the transition from secondary education into postsecondary education or career for “every” student (U.S. Department of Education, 2010, p.1). The same meaningful opportunities discussed by the U.S. Department of Education align with the meaningful and inclusive participation outlined by the ethical guidelines established by the Council for Exceptional Children (2015). For students without disabilities, the provision of the “meaningful opportunities” are provided within the general education curriculum through academic coursework, career and technical education programs, and embedded learning opportunities offered by social clubs, organizations, and athletics. The same academic coursework, career and technical education programs, social organizations, and athletic opportunities are afforded to those students with disabilities through the FAPE provided by the Individuals with Disabilities Education Act (2004). However, to provide these “meaningful opportunities” described by the U.S. Department of Education for students with MSDs, transition
planning must take place and a plan must be developed to support them in making successful progress toward being “college and career ready” (U.S. Department of Education, 2010, p.1). Intentional, specially designed instruction should be developed to specifically teach students the necessary academic, social, career and technical education, and daily living skills to the maximum extent possible by providing evidence-based practices to progress students toward autonomy in postsecondary skills.

The literature has identified a social problem in successful postsecondary outcomes for students with MSDs (Certo et al., 2008). Transition-based postsecondary curriculum has been identified as best practice through a review of evidence-based instruction (Kohler & Illinois University, 1996). A curriculum review of the career and technical pathways provided evidence-based practices embedded in their programs (Research and Curriculum Unit, 2018). However, participation of students with disabilities is limited within the career and technical programs (Cameto & Wagner, 2003).

**Transition Planning**

Planning for transition and providing transitional services has been mandated by IDEA (2004) for students receiving special education services by the age of 16. Transition planning has been defined as a “results oriented” (IDEA, 2004, §1401) process that includes “coordinated planning, collaboration, and decision-making among school staff, families, and a network of community agencies” (Davies & Beamish, 2009, p. 248). Transition planning requires specific transition services to be included as part of the curriculum for students who are served through special education. These services include instruction, related services, community experiences, the development of employment and other post-school adult-living objectives, daily living skills, and functional career and technical education evaluations (IDEA, 2004, 602[34]).
Areas of postsecondary life for students with MSDs are addressed during transition planning and include postsecondary education, career and technical training, employment, adult services, independent living, and community participation. A multidisciplinary team is responsible for ensuring that the transition plan includes the student’s needs, preferences, and interests. Beginning in preschool, career awareness, social, self-determination, self-advocacy, and decision-making skills emerge and are fostered as students progress through elementary, middle, and high school.

In addition to transition mandates, IDEA (2004) requires teachers to use “evidence-based practices,” or practices that have shown effectiveness through high-quality research, to provide instruction for students with disabilities (Council for Exceptional Children, 2018). The What Works Clearinghouse (2018) was created in 2002, and the National Secondary Transition Technical Assistance Center (NSTTAC, 2018) was created in 2006 to provide access to evidence-based practices for teachers to use for classroom instruction in many content areas, including transition. Although this has been mandated, the research still indicates a research-to-practice gap for using evidence-based practices in transition instruction (Mazzotti & Plotner, 2016). Benitez et al. (2009) credit a lack of knowledge and understanding of terminology, professional-development opportunities, and access to resources as factors of limited utilization of evidence-based practices in transition instruction. Effective transition practices identified by Kohler and Field (2003) included student-focused planning, student development, interagency collaboration, family involvement, and program structure. These practices create individual student-centered programs that allow educators to focus on interests, preferences, and abilities while providing school- and work-based occupational experiences and networking to create lifelong learning and supports to better link efficient and effective delivery of instruction (Kohler & Field, 2003).
The Annual Performance Report (APR), submitted to the U.S. Department of Education through the Office of Special Education Programs by each state, holds education agencies accountable for transition services for students with disabilities by measure of specific indicators. Indicator 13 is a compliance indicator that measures appropriateness of postsecondary goals and progress for students as they move through transition planning and instruction (National Technical Assistance Center on Transition, 2018). To meet minimum compliance requirements of Indicator 13, transition assessments must be conducted to develop age-appropriate measurable postsecondary goals and must be written in the areas of training, education, employment, and when appropriate, independent living and updated annually; services must be included within the transition plan to meet the postsecondary goals; postsecondary goals must be related to transition service needs; and evidence of student participation in IEP Team meetings must be used to plan for transition services, as well as to any agency providing services to meet transition goals (IDEA, 2004).

Indicator 14 is a report of the postsecondary outcomes of students served through special education services and their status post-high school graduation. States must report percentages in three areas: (a) students enrolled in higher education, (b) students enrolled in higher education or competitive employment, and (c) students enrolled in higher education, or in some other postsecondary education or training program or competitively employed within one year of leaving high school (IDEA, 2004).

In Missouri, 2,123 IEPs were reviewed for compliance using the Indicator 13 checklist, published by the National Secondary Transition Technical Assistance Center (2012). The IEPs reviewed averaged a compliance rating of 82%. Erickson, Noonan, Brussow, and Gilpin, (2014) used bivariate linear regression procedures to explore the relationship between indicator 13 and 14. Researchers found a statistically significant relationship between these two indicators.
Compliance with indicator 13 has a positive relationship and has predictive value for outcomes reported for indicator 14 (Erickson et al., 2014).

According to the most recent 2016 APR report, Mississippi has a compliance rating higher than the national average for indicator 13 (United States Department of Education, 2016; 2017). Table 1 compares the national compliance average to Mississippi’s compliance average.

Table 1
Comparison of Mississippi and National Results for Indicator 13 Compliance

<p>| Indicator 13: Percentage of youth aged 16 with an IEP that includes appropriate measurable postsecondary goals that are annually updated and based upon an age-appropriate transition assessment, transition services, including courses of study that will reasonably enable the student to meet those postsecondary goals and annual IEP goals related to the student’s transition service needs. There also must be evidence that the student was invited to the IEP Team meeting where transition services are to be discussed and evidence that, if appropriate, a representative of any participating agency was invited to the IEP Team meeting with the prior consent of the parent or student who has reached the age of majority (20 U.S.C. 1416(a)(3)(B)). |</p>
<table>
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<tr>
<th>Mississippi Results</th>
<th>National Results</th>
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<tbody>
<tr>
<td>Compliance</td>
<td>99.96%</td>
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Although a 99.96% compliance rating is a positive finding in developing appropriate transition plans, the postsecondary outcomes show those plans are not effective in producing the target outcome results reported by the Mississippi Department of Education (U.S. Department of Education, 2016). Table 2 compares Mississippi’s outcome rates and national outcome rates for Indicator 14 (U.S. Department of Education, 2017). Mississippi’s percentage of students who continue in a college or career postsecondary outcome with Indicator 14 falls below the target and the national average in all three areas measured.
Table 2

Comparison of Mississippi and National Results of Indicator 14

Indicator 14: Percentage of youth who are no longer in secondary school, had IEPs in effect at the time they left school, and met the following:

<table>
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<th>Mississippi Results</th>
<th>MS Target ≥</th>
<th>National Results</th>
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<tbody>
<tr>
<td>Enrolled in higher education within one year of leaving high school</td>
<td>29.01</td>
<td>36.0</td>
<td>27.4</td>
</tr>
<tr>
<td>Enrolled in higher education or competitively employed within one year of leaving high school</td>
<td>66.78</td>
<td>73.0</td>
<td>63.0</td>
</tr>
<tr>
<td>Enrolled in higher education or in some other postsecondary education or training program, competitively employed, or in some other employment within one year of leaving high school (20 U.S.C. 1416(a)(3)(B))</td>
<td>84.38</td>
<td>90.0</td>
<td>78.6</td>
</tr>
</tbody>
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Components of secondary transition planning should provide a comprehensive outlook of the student’s involvement in transition planning, assessment and progress monitoring of present levels of academic achievement and functional performance, defined measurable postsecondary goals and related measurable academic goals, transition services that provide a framework of the strengths, interests, preferences, and needs of students with MSDs for potential employment opportunities. For students with MSDs, a transition plan should be multifaceted and should include a foundation of functional academic skills and community experiences to increase quality of life (Dubberly, 2011).
A Response to Creating a Transition-Based Education

The Kohler model is a taxonomy of transition services that encompasses the many facets of educational planning (Hardman & Dawson, 2010). Based on the idea that all secondary curriculum is intended for transition education and should be the foundation for educational programming and not an added component, Kohler and Illinois University (1996) developed a model for developing transition plans through: (a) goals based on abilities, needs, preferences, and interests, (b) instruction activities and experiences that prepare students for postsecondary goals, and (c) a collaborative and consultative effort among student, family, and professionals. Using the 1996 Taxonomy for Transition Programming as a foundation found in, the taxonomy was updated to incorporate evidence-based practices found in the literature to develop a plan for a more transition-focused education (Kohler, Gothberg, Fowler, & Coyle, 2016). Figure 1 below shows a summary of the components with related examples that are described by Kohler and her colleagues (2016).
Figure 1. Taxonomy for Transition Programming 2.0. A comprehensive view of the components of postsecondary transition planning, organizing, and evaluating effectiveness and progress for students with disabilities (Kohler et al., 2016, p. 3).

**Student-focused planning.** Decisions concerning the services, supports, programs, and assessment for students with disabilities are to be based on the student’s individual goals, interests, preferences, strengths, and weaknesses. Self-awareness and the ability to gather information about themselves to make decisions independently is a desired outcome through the transition process. The assessment data is used to monitor growth toward goals and involving students in the process to gain self-determination skills. Students’ involvement with a multidisciplinary team of professionals, such as general education teachers, special education teachers, administrators, agency personal, parents/guardians, counselors, school psychologists, and anyone else directly involved in developing the IEP, provides opportunities for students to participate and practice self-advocacy skills, expressing self-awareness of their strengths and needs to gain better supports and services for their educational planning and future
postsecondary life choices (Wehmeyer, 2002). Through IEP development, planning strategies, and student participation, each transition plan can be developed and implemented based on the individual student’s primary needs for supports.

In a study by Repetto, Pankaskie, Hankins, and Schwartz (1997), 124 practices were identified as providing support for student participation in transition planning, a student-focused planning strategy. A positive correlation was identified by Benz, Lindstrom, and Yovanoff (2000) between positive postsecondary outcomes and using a student-focused planning approach.

**IEP development.** Documentation of student’s interests and preferences needs to be considered as goals are developed based on transition assessment results (Mazzotti et al., 2009). Determining those interests and preferences can be the result of informal assessment procedures, such as casual conversation or interest inventories. Goals related to postsecondary education or training, occupational recreation and leisure, daily/functional living, and community involvement should all be based on the identified interests and preferences of the student. To maintain student-focused planning during the IEP-development process, the decisions made should be the result of student choice. Providing options for students allows for decisions to be made by the student and an IEP transition plan developed that meets the students’ needs for postsecondary goals and aligns the goals with services to meet those goals (Mazzotti et al., 2009). The role of each team member should be identified during development and a means of evaluating effectiveness and progress should be established.

**Planning strategies.** With planning beginning no later than age 14, transition-focused planning should be initiated and implemented by age 16. The process should be centered around a student-centered planning approach, making considerations for behavior, culture, linguistic, communication, and sensory needs. Goals should be the results of age-appropriate assessments to
measure intelligence, achievement, behavior, aptitude, skills, career interests, preferences, and readiness (Mazzotti et al., 2009).

Planning should also meet the needs of the family. Council for Exceptional Children Ethical Principal 5 states that relationships among families should be established with respect and involvement in the decision-making process (Council for Exceptional Children, 2015). Involving parents and making meeting times and places conducive to the family and its needs is an important strategy to increase family involvement. In a model developed by Hirano and Rowe (2015), parental involvement beyond homework help and attendance to meetings is a significant predictor of transition outcomes. Networking families and parents with service providers into the planning and development as early as possible increases options for students to be provided appropriate and needed services after high school graduation and increases positive outcomes after completion of secondary education (Hirano & Rowe, 2015).

**Student participation.** Student participation, one of the six principles of IDEA (2004), is mandated to involve students into the development of their IEP, including transition-plan development. For a student to participate, the student must be prepared. Providing opportunities for students to be instructed on the transition process and vocabulary, practice through role-play or video model, and be given gradual opportunities to demonstrate self-advocacy and self-awareness skills during IEP-planning and -development meetings are all examples of methods to prepare students to participate. For students to be able to participate to their maximum potential, behavior, communication, and any other needs must be considered and accommodated for to maximize their self-determination.

A review of the literature showed that student participation in the planning and implementation process of transition increased the likelihood of employment (Southward & Kyzar, 2017). Again, research-to-practice failed to align, as only 10% of students are attending
transition plans with only 3% taking leadership and decision-making responsibilities (Shogren & Plotner, 2012). Best practices identified in Luecking and Luecking’s (2015) study included student-led IEP as part of the discovery component of the “MSTC Model and Guideposts” (p. 8).

**Student development.** Student development includes activities and experiences related to assessments and instruction that are associated with life skills, career and technical education, structured work experiences, supports, and services (Kohler & Illinois University, 1996). These activities prepare students in all areas of development—academic, social, emotional, and career and technical education—to increase independence after high school. Self-determination skills are imperative to completion and success beyond high school (Repetto et al., 1997). A strong correlation exists between completion of high school and career and technical education instruction (Corbett, Clark, & Blank, 2002).

**Assessment.** Assessment is where transition planning begins (Mazzotti et al., 2009). Interest inventories, career assessments, and aptitude tests are options for gathering data in planning all areas of transition: academic, life, social, emotional, and occupation/employment. Assessment provides a means of decision-making ability. The results of both formal and informal assessments can be combined to determine initial goals and services needed, the progress toward goals that are being made or if review or revision needs to take place. Formative assessments drive academic instruction (Kohler et al., 2016; Mazzotti et al., 2009). Appropriate accommodations for assessments need to be administered for students to demonstrate the most clear and realistic data of their current levels of performance.

Beginning in middle school, an ongoing collaboration among multidisciplinary team members, including the student, is necessary to remain effective (Sitlington, 2008). Sharing progress trends and best practices in assessment strategies and results should create a consistent
learning environment for students. Assessments help guide students to make informed decisions to prepare for life after high school (Mazzotti et al., 2009).

**Academic skills.** Coursework that students participate in during high school should align with the goals that have been set by the multidisciplinary team (Mississippi Department of Education, 2018a). The content of the curriculum begins to focus on college readiness in early elementary as seen in the curriculum scaffolding documents published by the Mississippi Department of Education (2018a). Academic content that is embedded into the transition curriculum has been found to be an effective approach that gives students the ability to gain a realistic expectation of using the academic skills (Bartholomew, Papay, McConnell, Cease-Cook, 2015; Collins, Karl, Riggs, Galloway, & Hager, 2010).

Academic skill development focuses on areas of weakness in content areas to provide supports and instruction that strengthen secondary transition skills (Bartholomew et al., 2015). Decoding, comprehension, and fluency are target skills to improve reading performance as well as functional sight words (Bartholomew et al., 2015). Academic instruction in writing improves self-determination, and math instruction increases knowledge in daily living and functional skills (Bartholomew et al., 2015).

Skill development in the general education, academic content areas provides students opportunities to generalize self-determination skills (Raley, Shogren, & McDonald, 2018). Participating in the general academic courses, such as science, math, technology, and so forth, provide students with increased opportunities in social-skill development (Raley et al., 2018; Spooner & Browder, 2015) and career options (Spoonier & Browder, 2015). These opportunities enhance the overall quality of life for individuals with MSDs (Spoonier & Browder, 2015). Teaching students a method of learning, such as mnemonic devices, graphic organizers, note-
taking strategies, and reflection journaling, gives opportunities for generalization of skills (Knight, Spooner, Browder, & Smith, 2012).

Academic behavior development targets skills that increase performance in the general education classroom as well. Behaviors such as attendance and participation in class allow the student to gain the skills needed for assignments, increasing overall academic performance. A method of organization of school work, schedules, and/or priorities makes for opportunities to use time and efforts more effectively. Self-monitoring strategies that are incorporated into development of academic skills showed an increase in self-determination for students to gain more independence (Mastropieri & Scruggs, 2010).

*Life, social, and emotional skills.* Improvement of quality of life is a primary goal of the purpose of education, providing access to services and supports prepares students for a postsecondary life. Independence can be gained through improving self-determination skills (e.g., self-advocacy, self-awareness, self-monitoring, decision-making, goal-setting, problem-solving, etc.). In a study with students with emotional and behavioral disorders, a curriculum established to develop relationships with adults within and outside of the school was found to be statistically significant (Sinclair, Christenson, & Thurlow, 2005). Instruction that teaches students the skills needed to make decisions about finances, health and medical care, safety, cooking, transportation, and so forth fosters autonomy to increase participation in their communities and leads to improved living skills (Malian & Love, 1998).

Involvement in recreational or leisure activities available within the community increases opportunities to participate in activities of interest or preference (Repetto et al., 1997). Again, explicit instruction in appropriate social and interpersonal skills expands opportunities for students to enjoy hobbies and make friends outside of family or work-related environments.
Employment and occupational skills. A theme that was identified in a study to examine factors related to positive transition outcomes, developing a student in both their academic skills and workforce skills can be accomplished through structured, paid work experience that gives students an opportunity to experience a variety of careers (Benz et al., 2000). An embedded career plan that is aligned with the academic core that is being taught should be the basis of instruction. Providing career and technical education to expose students to entry-level and advanced skills needed in a variety of career pathways. Students should be guided through seeking employment by providing instruction and practice in interview skills and resume development. Career-awareness opportunities (e.g., career fairs, guest speakers, job shadowing, tours, etc.) provide options for students to make choices based on interest, preferences, and ability.

Authentic settings for employment/occupational skill development provides a generalized opportunity for students to learn and practice needed skills in specified careers. Evidence that students who participated in school-based, community-based, or competitive on-site structured work experiences had more positive postsecondary outcomes (Martin, Tobin, & Sugai, 2002). Credit toward graduation should be provided for participation in work experiences (Kohler et al., 2016).

Collaboration among agencies and local employers should be incorporated into the transition plan to establish a network of support and services for students after graduation. Developing relationships with these individuals and having them be a process early on in implementing the transition plan gives increased opportunities for the student to gain confidence and show a realistic demonstration of his or her current ability (Sinclair et al., 2005).

Student supports. Ensuring that students are given a free and appropriate public education is dependent on the supports and services provided to create equal access to the
general curriculum to the maximum extent possible, establishing a universal design for learning (Martin et al., 2002). The universal design for learning, a structured framework of providing all students equal access and opportunities to learn instead of a one-size-fits-all solution (Canter, King, Williams, Metcalf, & Potts, 2017).

Related services provide additional skills (e.g., communication, language, fine/gross motor skills, etc.) and services (e.g., transportation, social work, counseling, etc.) to enhance performance academically, occupationally, and socially. Teaching students to use environmental accommodations and natural supports to function independently in school and in the community has been identified as an essential component of the structure of a transition program (Morningstar & Mazzotti, 2014).

Students who were provided with the needed accommodations in academic coursework, opportunities for remedial instruction, and enrichment showed an enhanced overall performance (Test et al., 2009). Information regarding postsecondary education or training opportunities given to students increased student-choice and participation in the development of goals. Requirements for college entry must be reviewed and explained so students are aware of steps toward continuing education, as well as supports and accommodations needed to be successful in postsecondary education or career (Morningstar & Mazzotti, 2014).

**Instructional content.** Instruction should be provided in a student’s least restrictive environment. Instruction provided should be relevant and rigorous. A universal design for learning should be embedded into the curriculum to provide the supports the student needs to perform to the maximum ability (Bartholomew et al., 2015). Accomplishments, strengths, and efforts should be recognized and praised (Bartholomew et al., 2015; Morningstar & Mazzotti, 2014).
Development of social and emotional skills should be embedded in instruction (Bartholomew et al., 2015; Collins et al., 2010). Students should be given opportunities to participate in community, co-curricular, and extra-curricular activities to gain exposure to a variety of skills, hobbies, and relationships. Community-based settings have been found effective as a service-delivery option for transition instruction (Hoover, 2016).

**Interagency collaboration.** Transition planning is a collaborative effort across agencies and disciplines that network to plan as a team working toward positive outcomes (Agrin, Cain, & Cavin, 2002; Davies & Beamish, 2009). Engaging stakeholders in the process of planning for students’ transition from high school and postsecondary career or education provide students with the FAPE afforded by IDEA (2004). Wraparound services are supported throughout the literature (Martin et al., 2002; Repetto et al., 1997).

**Collaborative framework.** A framework of collaboration is a method of establishing a network of supports and services for students to enhance performance in academic, occupational, and social independence. A collaborative team that includes individuals who directly influence decisions in planning, implementing, and evaluating transition plans (i.e., student, parents/guardians, special education teacher, general education teacher, local employers, community agencies, postsecondary education representative, etc.; Martin et al., 2002). Agencies should be identified by their purpose and role in transition planning and development. Roles and responsibilities of each member of the team should be clearly expressed and understood. Policies, procedures, and expectations should also be clearly expressed and understood among all team members. Policies and procedures should be reviewed and evaluated at least annually to determine effectiveness.

A system of communication should be established to effectively share progress, concerns, and need for possible review or review in the development of the transition plan (Wehman,
Participation in professional development, growth in meeting students’ needs, and providing appropriate supports and services creates a framework for becoming a collaborative team working toward consistent goals (Benitez et al., 2009).

**Collaborative service delivery.** Participation of the collaborative team in planning, development, and review meetings is necessary (Council for Exceptional Children, 2015). Requesting needed information from parents, employers, agencies, and so forth assists in making informed decisions. Funding and flexible staffing should be structured to provide transition instruction (Bounds & Gould, 2000). Students and families should be networked with appropriate service providers to help with planning for financial needs, health care, mobility, mental health, or transportation needs (Repetto et al., 1997).

In a study conducted by Luecking and Luecking (2015), a “Seamless Transition Model” (p. 6) was described to improve postsecondary outcomes. This model has been implemented in multiple districts throughout the state of Maryland, and the researchers identified barriers for transition. These barriers included lack of coordination in school-based services, limited access to work experiences and employment services, insufficient post-school support, lack of connection with adult services, and limited pursuit of postsecondary education. To combat these barriers, the framework for a Seamless Transition Model was implemented after a statewide evaluation of best practices. Best practices found about improving employment opportunities included informational interviewing, job shadowing, job sampling, unpaid internship, paid internship, job development, workplace supports, and work experience coordinated with school programs and schedule (Luecking & Luecking, 2015). All of these practices are based on the collaboration of agencies within the local workforce.

Consistent collaboration among educators (i.e., special education, general education, and career and technical education teachers) should be established to ensure understanding and
progress toward goals. Delivery of instruction should be a cooperative effort of the team and delivered based on the least restrictive environment in which instruction is provided. Natural environments provide for a more generalized experience to demonstrate acquired skills.

**Family engagement.** Families are one of the strongest links between students and their lives after high school. Teachers are considered to be the “complement” to the parent (Ankeny & Lehmann, 2010, p. 287). A parent knows what the child will need to function within his or her community. The parent knows the appropriate social skills that are acceptable and the jobs that could be available for the student. Parental involvement and input is very important in an effective transition plan. The parents know what they want for their child. In a study conducted by Henninger and Taylor (2014), the most frequent theme in the results of the data was parents wanting students to “have an occupation or functional role in society” (p. 102).

**Family involvement.** A study conducted by Jivanjee, Kruzich, and Gordon (2009) found that parents are asking “to be considered as a resource” (p. 435). Family participation in IEP development provides a realistic description of the students’ needs and supports based on their cultural background and their overall knowledge of the child. Families contribute to the entire development of the transition plan (i.e., assessment, evaluation, planning meetings, decision making, and service delivery). Concerns and input from families should be addressed during planning and review meetings.

Family involvement in the decision-making process and a level of mutual respect among team members is an ethical standard among special education professionals (Council for Exceptional Children, 2015). Families’ participation in the transition plan development and delivery is a strong predictor of success. Teaching families to participate in advocacy, training, and being a liaison within the community improves the possibility of more positive outcomes.
Instead of being used as a resource, in a qualitative study of 42 families, parents described themselves as “excluded” (p. 435) from the planning process and also feeling their children are not prepared for life as an adult (Jivanjee et al., 2009). Davies and Beamish (2009) also found “low levels of family participation” (p. 249) in a quantitative survey of 218 parents of adults with MSDs. The skills and experiences designed in the transition plan should provide the child with the least restrictive functioning ability within the local community. With effective development of the transition plan, the child should smoothly move from high school to either their employment setting, postsecondary educational setting, or living facility. The No Child Left Behind Act requires schools to “partner” and “involve” parents (Vaden-Kiernan, 2005, p. 2). However, the lack of involvement is still a major concern of parents. In a study of parental involvement conducted by Murray, Handyside, Strake, and Arton-Titus (2013), findings show that parents feel “intimidated” (p. 156) by professionals who seem to be “judgmental and impersonal” (p. 153). Through “embedded” (p. 149) learning experiences, parents were provided the knowledge to “confidently” (p. 156) communicate and participate in the education planning for their child with a disability. This education relieved the feelings of “despair” (p. 162) and allowed them to gain trust and confidence.

**Family empowerment.** Family empowerment is meeting the needs of the family to equally participate in the transition development. Gathering information from the family prior to age 14 to preplan and gather options to present at planning meetings is essential. All material and discussion presented in the appropriate language that is easy to comprehend ensures effective communication between families and school. Educators should assist families and the student in locating resources and meeting requirements for students who are applying for postsecondary education or training. Some families may need assistance in locating or applying for
postsecondary adult services available in the community. Students and families may also need support and instruction provided to participate in community activities (Repetto et al., 1997).

In a study conducted by Sinclair et al. (2005), evidence that providing families with a case-management system to help guide them through identifying, applying, receiving, and maintaining services was found to be a significant factor in increasing positive outcomes of postsecondary transition.

**Family preparation.** Family involvement and participation requires understanding of the process of transition planning and development. Parent trainings that teach parents the needed skills and provide the information for resources that can enable them to be active participants in the transition process, as well as parent trainings that explain the IEP process, purpose of transition assessments, methods of promoting self-determination at home, and so forth, should be incorporated into transition development (Sinclair et al., 2005).

Resources for agencies and services that families could possibly qualify for should be located and presented as options for discussions during meetings (Sinclair et al., 2005). Community experiences should be facilitated by educators to provide students and their families with opportunities to network and build relationships (Dubberly, 2012). Families should be provided and explained information and resources regarding families’ and students’ rights to education equality and the laws, policies, and procedures that ensure FAPE.

**Program structure.** Transition programs should be developed and structured to best meet the needs of the individual student in his or her best learning environment (Repetto et al., 1997). Constructing transition programs in a way that is not only student centered but also provides instruction that is purposefully planned (Repetto et al., 1997). This purposeful planning also is reflected by Mississippi Department of Education in its mission to provide “meaningful opportunities” for preparing students to be college and career ready (Mississippi Department of
Education, 2018a). Meaningful instruction is also supported in the research by Sinclair, Christenson, Evelo, and Hurley (1998), through a study to improve postsecondary outcomes of students with disabilities.

**Program characteristics.** Transition programs should provide every opportunity to the maximum extent possible for students to receive a traditional diploma until the age of 21 (Kohler et al., 2016). Transition programs should be designed to be flexible to meet the student’s individual needs, and goals should be outcome orientated and provide the rigor and relevance needed for appropriate instructional content. A tiered structure of providing a gradual increase in supports and services, as needed, provides opportunities for the student to be educated in the general curriculum to the maximum extent possible. Programs designed to meet the needs of students with disabilities should reflect equal opportunities, resources, and experiences that are provided for typical peers (e.g., college preparation, academic courses, career awareness activities, etc.).

For completion of secondary education, options should be provided to meet the requirements for a traditional diploma (Kohler et al., 2016). A variety of elective options should be outlined and offered based on a student’s ability and interests (Kortering, Braziel, & Tompkins, 2002). Options, requirements, and implications should be clearly defined and given to families prior to a student entering the ninth grade (IDEA, 2004; Mazzotti et al., 2009).

**Program evaluation.** An effective program is a program that has been evaluated and in which decisions are made based on results and outcomes of those evaluations. Determining if a program is effective is a necessary and repetitive sequence designed to review and revise the development of the program to make improvements toward best meeting students’ needs (Grigal, Neubert, & Moon, 2001; Test, Aspel, & Everson, 2006). Clear expectations of the program’s purpose and intended outcome create a system of evaluation to make positive change.
Decisions for individual students are made on an individual determination of the data gathered through program evaluations. With this data, educators can monitor progress toward meeting individual transition goals that not only focus on academics in the performance and completion of courses, but also in areas of social, emotional, behavioral, and job skills, as well as and completion of courses growth (Kohler & Illinois University, 1996). This data also provides the scheduling to fade or introduce additional supports and services (Kohler & Field, 2003)

**Strategic planning.** “Planned transitions are smooth transitions” (Hess, Gutierrez, & Academy for Education 2010, p. 1). Strategic planning is another component of the repetitive sequence of tasks that must be done regularly to ensure the most positive outcomes. Planning of transition programs requires a team approach. The multidisciplinary team includes anyone directly involved in the development and delivery of the program instruction, supports, or services, including the family, educators, administrators, therapists, community service representatives, and employers. Planning is dependent upon effective evaluation of the program (Kohler et al., 2016). The outcomes of the data gathered through those evaluations provide the information for best practices and appropriate supports and services to be made (Mazzotti et al., 2009). Progress, maintenance, or regression toward goals are also factors that guide the planning and pacing of delivery of transition programs.

During the planning process, a student-centered, outcome-based method should be used for the team to develop goals that are measurable with the criteria that are needed to show progress (Mazzotti et al., 2009). Those goals then should be reviewed to determine what supports and services should be considered for the student to make progress toward each goal. Informal assessments, such as needs assessments, can be conducted to assist in making the best decisions for providing a least restrictive environment. A method of assessment is determined to best measure progress toward each goal (Mazzotti et al., 2009).
**Policies and procedures.** Positive outcomes are a result of adhering to policies and procedures that have been developed and set in place for the protection and accountability of all members of the multidisciplinary team (Kohler et al., 2016). In a team approach, each individual member’s effectiveness in his or her specific role in the transition program is vital for improving postsecondary outcomes.

Timelines for developing, reviewing, and revising should be established to maintain the consistent planning and evaluation procedures (IDEA, 2004). Policies to include evidence-based practice should have been established to ensure quality instruction is being delivered (IDEA, 2004; Mississippi Department of Education, 2018a). Parent and student participation is also a policy and an ethical standard developed to ensure accountability and effectiveness of program (IDEA, 2004; Council for Exceptional Children, 2015). The greater the awareness of the established policies and procedures, the greater the increase of compliance, which in turn increases positive outcomes (Dieterich & Smith, 2015).

**Resource development and allocation.** Providing a quality education for students with or without disabilities requires instructional and support staff to be highly qualified (Mississippi Department of Education, 2018a). Both content knowledge and pedagogy are imperative in the performance of all team members providing instruction, services, or supports. Team members must be evaluated through multiple means to ensure program effectiveness.

A network of relationships must be established between secondary educators, service providers, potential employers, and/or postsecondary educators (Council for Exceptional Children, 2015; Sinclair et al., 2005). These relationships build a foundation of transition from secondary education to postsecondary life in a career or continuing education.

Evidence-based practices must be included in the instructional design of each transition plan (Council for Exceptional Children, 2015; IDEA, 2004). The Council for Exceptional
Children (2018) defined *evidence-based practice* as an intervention based in science and rated on the research design, quality indicators, and classification of each experimental studies examining interventions through publication in peer-reviewed journals. Quality indicators ensure that methodology is thorough, valid, and reliable (Council for Exceptional Children, 2015). Each experimental design should include the following categories: evidence based, potentially evidence based, mixed effects, insufficient evidence, or negative effects (Council for Exceptional Children, 2015).

Teachers and service providers need to be supported in professional development, coaching, and given feedback as they implement evidence-based practices into instruction and assessment. Professional development is a primary component of implementing evidence-based practices into transition instruction (Benitez et al., 2009; Mazzotti & Plotner, 2016). A lack of preparation and professional development for teachers in evidence-based practices related to transition has been found by several researchers (Cook & Cook, 2011; Mazzotti & Plotner, 2016). A study conducted by Plotner et al. (2016) identified a direct effect between preparation and delivery of secondary transition evidence-based practices.

*School climate.* Team members having confidence that the best interest of the student is the center of the transition program is critical. Realistic expectations of students’ full potential are a value that creates exceptional environments for special education services to be delivered (Turnbull et al., 2016). Expectations and procedures for students, educators, and other team members need to be clearly defined. Individualized programs need to be designed with intended outcomes to improve academic, behavioral, emotional, social, and workforce skills.

The positive learning environment that is created by educators and administrators develops a culturally responsive atmosphere for teachers to model respect, trust, acceptance, and support. Inclusion within the general education environments with typical peers increases
mutually positive attitudes among peers and gives students a sense of belonging (Osher & Pickeral, 2013).

Engagement is valued and encouraged through positive recognition of efforts and performance. In a study conducted by McKenna, Muething, Flower, Bryant, and Bryant (2015), specific praise was implemented within classroom instruction as a practice to increase engagement. Although low, a significant relationship was found between the variables engagement and praise.

Advocating for students and being agents of change is a role that educators must step into to ensure equal and high-quality opportunities for students to participate in and be engaged in full citizenship within their school, home, and local community. The Council for Exceptional Children (2015) outlines five professional standards that must be used to advocate for students with disabilities and to ensure appropriate education and services are being provided. The following are the Council for Exceptional Children standards that outline advocacy expectations (Council for Exceptional Children, 2015):

1. Continually seek to improve government provisions for the education of persons with exceptionalities while ensuring that public statements by professionals as individuals are not construed to represent official policy statements of the agency that employs them.

2. Work cooperatively with and encourage other professionals to improve the provision of special education and related services to persons with exceptionalities.

3. Document and objectively report to one's supervisors or administrators inadequacies in resources and promote appropriate corrective action.
4. Monitor for inappropriate placements in special education and intervene at appropriate levels to correct the condition when such inappropriate placements exist.

5. Follow local, state/provincial, and federal laws and regulations which mandate a free appropriate public education to exceptional students and the protection of the rights of persons with exceptionalities to equal opportunities in our society.

Knowing and understanding the law, policies, procedures and professional standards is essential to advocate and create needed change for students with disabilities (Dieterich & Smith, 2015; Whitby, Marx, McIntire, & Wienke, 2013). Developing positive relationships among multidisciplinary team members creates an environment to problem solve in a proactive manner and engage in conflict resolution when necessary (Whitby et al., 2013). Adherence to the law, policy, and best practices ensures an appropriate education that prepares students to transition from school to work effectively.

A Plan With No Result

A good plan is only successful if it is implemented effectively. Kohler and her colleagues (2016) developed a model of transition services that includes the planning process to create a plan that best meets the students’ needs. According to both research (Kohler et al., 2016) and legislature (IDEA, 2004), delivering transition instruction must be based on evidence-based practices that have been effective in increasing positive outcomes of students with disabilities as they progress toward meeting their goals: academic, social and behavioral, and transition.

Based on the Indicator 13 checklist developed and maintained by National Secondary Transition Assistance Center (2018), transition plans for students with disabilities in a small rural school district, Miller-Warren (2015) found that out of 39 reviewed plans, zero met the
qualification for adequate, good, or exemplary, 12 of those plans met the qualifications at a level of moderate, leaving the remaining 27 as poor. Writing transition plans is not enough; delivering adequate instruction, services, and supports embedded with exposure to real-life experiences is the most effective way to prepare students for a college or career postsecondary life (Collet-Klingenburg & Kolb, 2011).

**Career and Technical Education as a Possible Solution to an Appropriate Education**

After an examination of graduation rates for students with disabilities in a rural area, similar to Mississippi, Wilkins et al. (2014) discovered a career-centered curriculum as an effective means of improving graduation rates. To provide this career-centered curriculum, Wilkins and her team strongly suggested “increasing the amount of utilization of career and technical education and opportunities for students to get on-the-job work experience” (2014, p.12). Career and technical education has been identified as a “major component of transition services for the majority of students with disabilities due to the employment and training services offered, the expertise of career and technical education staff in preparing young people for future employment” (Test et al., 2006, p. 229). Extending the principle of FAPE into transition instruction through the use of career and technical education pathways is a “viable option for students regardless of their academic ability, social-skill competence, or intentions for postsecondary education (Dieterich & Smith, 2015, p. 60).

Career and technical education pathways are designed to provide students of “all ability levels the opportunity to develop skills for a postsecondary career” (Dieterich & Smith, 2015, p. 60). The general curriculum designed for career and technical education instruction includes the components of community-based instruction and community-based career and technical
education instruction for students with and without disabilities. Career and technical education has been defined by the Carl D. Perkins Act (2006) as the organized educational activities that

A) offer a sequence of courses that

a. provides individuals with coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions;

b. provides technical skill proficiency, an industry-recognized credential, a certificate, or an associate degree; and

c. may include prerequisite courses (other than a remedial course) that meet the requirements of this subparagraph; and

B) include competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship, of an individual.

Career and technical education pathways are designed to provide a pathway to completion of high school by linking academic coursework to goals associated with a plan for college or career (Owen & Hierholzer, 2016). Career and technical education instruction takes place in a classroom environment that combines both academic and occupational instruction through the use of hands-on learning experiences (Kerna, 2012).

Pathways designed for career and technical education curriculum align with the 16 career clusters that include a variety of industry and occupations that are outlined in the National Career Cluster Framework (Owen & Hierholzer, 2016). In career and technical education pathways,
students have the opportunities to participate in experiences that include on- and off-campus work experiences, career-skills assessment, job-readiness training, job-search instruction, job shadowing, job-skills training, job-placement support, job coaching, internships, apprenticeships, and entrepreneurship programs (Cameto & Wagner, 2003).

Career and technical education provides students with significant benefits (Wonacott, 2001) and has been identified as a “logical” placement for students with disabilities (Habor & Sutherland, 2008, p. 4). The IDEA (2004) is the “roadmap” (Dieterich & Smith, 2015) legislation that guides career and technical education educators through the development and implementation of curriculum for students with MSDs. Along with IDEA, the ADA (1990) and Section 504 of the Rehabilitation Act (1973) require access to all federally funded programs for all students regardless of disability (Wonacott, 2001). The Carl D. Perkins Career and Technical Education Improvement Act (2006) also requires equal access to all populations of students and promotes interagency collaboration into career and technical education pathways (Cameto & Wagner, 2003). Carl D. Perkins Career and Technical Education Improvement Act of 2006 (P.L. 109-270) discussed postsecondary outcomes and addressed a need for improvement of those outcomes for all students, including those with disabilities. Specifically, this piece of legislation, sought to ensure access for students with disabilities to be not only prepared but “self-sufficient” (Carl D. Perkins Act, 2006, 134 (b)(8)(L)).

Suggestions made by Dieterich and Smith (2015) to address the impact of special education law on the curriculum and instruction of career and technical education programs indicated a need for more participation in IEP meetings, development of reasonable accommodations, increasing teacher training, and building relationships. Along with supporting the needs of students with MSDs, career and technical education educators need a stronger foundation in special education policy and law (Casale-Giannola, 2012). A better knowledge of
legal requirements concerning students with MSDs will lead to better compliance (Dieterich & Smith, 2015).

**Embedded Evidence-Based Practices on Career and Technical Pathways**

Evidence-based practices that have been identified for postsecondary-transition instruction align with practices that are included in career and technical education program structure and instruction (Cameto & Wagner, 2003; Casale-Giannola, 2012). Career and technical education provides a universal design of learning for students as a general education curriculum for students to engage in career and technical education skill instruction. Embedded instructional practices within the career and technical education curriculum provides students with explicit and systematic instruction that is distributed throughout the routines and activities that are designed (Casale-Giannola, 2011).

The benefits of students with MSDs participating in these career and technical education pathways improves the outcomes of students’ success by providing them with the evidence-based practices that have been identified as best practice for teaching students with MSDs and are in most cases embedded in the curriculum and teaching practices of career and technical education curriculum (Casale-Giannola, 2011).

**Technology.** Technology and its advancements have been evolving over the past several decades. There is a strong evidence base that supports using technology to instruct students with MSDs (Browder, Wood, Thompson, & Ribuffo, 2014). Two primary methods of instructional technology are video modeling and computer-assisted instruction.

**Video modeling.** Video modeling is a prompting strategy that provides students with a demonstrated target skill to be modeled. Results of the evidence base of studies conducted showed positive outcomes to increase job-related skill performance (Bellini & Akullian, 2007;

**Computer-assisted instruction.** Although evidence is moderate, computer-assisted instruction is an engaging and effective practice for teaching students with MSDs (Ramdoss et al., 2012). Using a group design, Hall, Cohen, Vue, and Ganley (2014) used technology as a universal design for learning intervention that showed statistically significant increases in comprehension among students with disabilities.

Career and technical education provides instruction with the latest and most up-to-date technology for both occupational skill use and instruction. The curriculum for each of the pathways taught is aligned with the Technology and Engineering Literacy Framework (Research and Curriculum Unit, 2018). Innovative instructional technology, tools that meet the needs of both students and industry, is listed as a best practice in the curriculum framework (Research and Curriculum Unit, 2018). Technology is embedded into project-based learning opportunities for students’ increased autonomy in performance (Research and Curriculum Unit, 2018).

**Active learning.** The pathway description of *Concepts of Agriscience* states that “the emphasis is on active learning” and a “focus on providing an opportunity for students to explore different fields of the agricultural sciences” (Research and Curriculum Unit, 2018). Inclusion of science-based applications and technology are also listed as a component of this course (Research and Curriculum Unit, 2018). Increased opportunities for active learning to facilitate more discussion, creating, and reflecting on skills for a student-centered approach is identified by the National Technical Assistance Center on Transition (2018) as an evidence-based practice in transition planning (Casale-Giannola, 2012). Each of the curriculum frameworks discuss the use of hands-on differentiated instruction, as well as the use of cooperative learning within the design of their pathway (Research and Curriculum Unit, 2018).
**Student-focused planning.** The career pathways that structure the available options for career and technical program choice provide students with established networking within the local workforce. Students gain exposure and experience in a structured environment that allows them to gradually increase their independence. In Mississippi, career and technical education includes the following pathways to provide choices to students: agriculture, food and natural resources; architecture and construction; arts, audio-video, and communication; business management and administration, education and training, finance, health science, hospitality and tourism; human services; information technology; law and public safety, corrections, and security; manufacturing; marketing; science, technology, engineering, and mathematics; and transportation, distribution, and logistics (Mississippi Department of Education, 2018c).

Beginning in seventh grade, counselors from general education and career and technical education begin discussing career pathways with students to prepare them to make appropriate choices prior to enrolling in a career and technical course (Mississippi Department of Education, 2008). This collaboration among school faculty provides students with the ability to make informed decisions. A focus on making choices based on the student’s interest and ability create a student-focused approach to help students participate in their IEP meetings. The ability for a student to participate and make decisions in his or her own IEP meeting is a self-determination strategy identified by Woods, Sylvester, and Martin (2010) as a statistically significant experience to improve self-efficacy.

This results-driven (Michelman, 2017) system becomes a “viable” option for students to add relevance to instruction and “connect their school to a career” (Jordan & Dechert, 2012, p. 1). According to a report published by the Research and Curriculum Unit at Mississippi State University, a majority of the available jobs on the job market are made of “middle-skills” jobs, jobs requiring education beyond a high school diploma but not necessarily a 4-year degree.
Participation in one of the career and technical education pathways allows workforce skills to be taught to extend and prepare students for middle-skills jobs.

The content of career and technical education coursework links to specific career or job skills and teaches students how to “complete real tasks they would do on a real job in real time” (Jordan & Dechert, 2012, p. 3). In a comparison of the academic and career and technical education classrooms, the career and technical education classroom was identified as a possible “model of inclusion instruction” when provided with the proper support in development and implementation of curriculum (Casale-Giannola, 2012, p. 41).

Student-focused planning includes social and emotional support (Kohler et al., 2016). In the following section, Academic support, discussion of embedding academic content and transition skills within each other’s programs is effective for academic support. However, this embedded curriculum is also effective for social and emotional support. The benefits of combining these two components of transition planning includes improving self-determination skills (Konrad, Walker, Fowler, Test, & Wood, 2008; Papay, Unger, Williams-Deihm, & Mitchell, 2015; Rowe, Mazzotti, & Sinclair, 2014), self-regulation skills (Korinek & DeFur, 2016), and goal-setting and self-monitoring skills (Lee, Palmer, & Wehmeyer, 2009).

**Academic support.** “You can have a job,” a portion of the title of a journal article written by Rammler and Ouimette (2016), describes a process of fusing the Common Core and transition curriculum together to best meet the needs of students in the transition planning and implementation process. Strengths of a career and technical education classroom as an inclusive setting included naturally occurring differentiated instruction (Casale-Giannola, 2012) and anchored instruction, an evidence-based strategy that involves enhancing the academic skills by “anchoring” it within an authentic application. Bottge et al., (2015) conducted a study using 471 students, with approximately 28% of those having a disability related to math, to identify the
impact of anchored instruction on inclusive math classrooms. Participants were separated into
two groups, one provided anchor instruction and the other continued teaching “business as usual”
(p.160). Statistically significant results were found to be present among students with a math
disability on the pre- and post-test given for the group receiving anchored instruction, compared
to the group not receiving anchored instruction (Bottge et al., 2015).

Embedding academic skills with transition skills has not only been identified as effective,
but also as necessary to successfully make progress toward transition goals (Bartholomew et al.,
2015). Collins et al. (2010) described a six-step process of embedding academic content with
real-life applications for students with MSDs. The six-step process included identification of the
functional purpose of academic content, specifically who will implement instruction, selection of
an appropriate response procedure, embedded target and nontarget information into directions,
prompts, and feedback for students to link concepts together, design data collection, and a plan to
maintain and generalize. (Collins et al., 2010). Teaching with multiple targets is an evidence-
based practice that promotes generalization and the ability to transfer skills into the needed
environment (Collins, 2007; Collins et al., 2010). Academic skills being aligned with transition
skills provides students with an appropriate expectation of using the skill.

In the 2008 Plan for Career and Technical Education, now Career and Technical
Education, “continuous promotion of academic achievement” is required (Mississippi
Department of Education, 2008, p. 31). Each of the career pathways are infused with academic
content, for each the pathways offered a plan of study that has been structured to match academic
content pathways related to the specific pathway for students to begin preparing for necessary
skills beginning in seventh grade (Research and Curriculum Unit, 2018). For example, in the
career pathway of Carpentry, seventh graders need to have the academic content knowledge in
seventh-grade language arts, Pre-Algebra or seventh-grade math, science, Eastern Hemisphere
Studies to 1750 (seventh-grade history), and Information and Communication Technology 1 (Research and Curriculum Unit, 2018). Opportunities to increase repetition of academic and career and technical education skills learned through longer class periods enhance the ability to generalize skills into needed environments (Casale-Giannola, 2012).

**Interagency collaboration.** Interagency collaboration, described by Kohler and Field (2003) as an effective transition practice, is an component embedded in the career and technical education pathways and coursework (Stone, 2014). Transition planning is a collaborative effort across agencies and disciplines that network to plan as a team working toward positive outcomes (Agrin et al., 2002; Davies & Beamish, 2009). Engaging stakeholders in the process of planning for students’ transition from high school to a postsecondary career or education provides students with the FAPE afforded by IDEA (2004).

Noonan et al., (2008) described the interaction among school and adult agencies in the interest of sharing resources to achieve common transition goals as interagency collaboration, a component of transition planning that has been identified by teachers as one of the weakest components. Although interagency collaboration has been described as a “critical element” (Morningstar, Kleinhammer-Trimill, & Lattin, 1999; Oertle & Trach, 2007, p. 38), as well as a “key component” (Kohler & Illinois University, 1996) of the transition planning process, teachers do not feel prepared to develop and sustain these relationships as part of the transition process (Benitez et al., 2009). In addition to not feeling prepared to provide instruction to students with disabilities, teachers are not satisfied with professional development (Benitez et al., 2009). Meadows, Davies, and Beamish (2014) provide three “roadblocks” (p. 340) that impede engagement in interagency collaboration; “lack of systemic knowledge about the transition process, lack of teacher knowledge about the importance of engaging with the post-school sector, and structural issues regarding the funding of post-school services” (p. 340).
Interagency collaboration has been linked to poor post-school outcomes for students with MSDs (Noonan et al., 2008). The lack of familiarity of these collaborative practices among special education teachers is evident by their involvement and inclusion of the practices in transition plans (Oertle & Trach, 2007). The occasional involvement with post-school agencies reported by Li, Bassett, and Hutchinson (2009) supports the evidence of lack of knowledge among special education teachers in their aspect of transition planning.

Collaboration among agencies happens within the community. The role of community during the transition planning and implementation process “fits perfectly in transition planning” (Hoover, 2016, p. 21). Unfortunately, a lack of community activities has been reported and has been identified as a possible link to the discrepancy in graduation rate and employment of students with disabilities and students without disabilities (Hoover, 2016). Community activities increase generalization for students by allowing opportunities to apply skills learned in the isolation of the classroom to be used in natural “authentic” environments (Hoover, 2016, p. 22). Outlined in her review of the role of community in transition, Hoover (2016) identified several community resources that are currently “underutilized” (p. 29): service learning, community-based instruction, community-based career and technical education instruction, community mapping, and summer employment. Teaching within the community not only allows for positive benefits for the student, but it is teachers’ “civic responsibility” (Hoover, 2016, p. 23) for the student to be able to make positive contributions back to their local community.

The curriculum was developed for each career pathway based on a collaborative effort between the employers and agencies in the specific pathways and the curriculum-development experts to create a curriculum that prepares students to be ready for continuing their education or beginning a career (Research and Curriculum Unit, 2018). The partnership between the local employers and legislators increase the relevancy of the curriculum to meet the needs of the local
communities within the state (Mississippi Department of Education, 2018c). Real-life networking and community-building opportunities for students provide a great presence in the community workforce, increasing confidence and performance by creating relationships that establish appropriate workplace dispositions (Casale-Giannola, 2012). Hands-on learning experiences and real-world application are opportunities that are provided for students who are enrolled in career and technical education pathways (Owen & Hierholzer, 2016). Exposure to more natural settings that allow students to generalize knowledge into the environment in which they will use the knowledge and skills being taught. These experiences engage and involve student during instruction (Owen & Hierholzer, 2016).

Each of the pathways offered through Mississippi’s career and technical education programs are aligned with professional organizations related to that career path that infuse ethics and standards within the curriculum (Research and Curriculum Unit, 2018). For example, safety practices are aligned with the Occupational Safety and Health Administration (OSHA) standards for class and lab areas applicable (Research and Curriculum Unit, 2018). Also, within each framework is a requirement to include professionals in class presentations and/or field trips (Research and Curriculum Unit, 2018).

**Community-based instruction.** Providing activities within the community for students to generalize skills learned in the classroom becomes “crucial” (Hoover, 2016, p. 22) due to the variety of opportunities that are available for students. Community-based instruction, a practice that has a strong evidence base that produces positive outcomes and increases the likelihood of students with MSDs having successful post-high school transitions (National Technical Assistance Center on Transition, 2018). Collins (2007), along with Test and Mazzotti (2011) have used community-based instruction to teach students both daily living and career and technical education skills. Community-based instruction provides students with opportunities to
practice functional skills within the natural environments of their local community (Dubberly, 2012). It provides students with opportunities to interact and build relationships among local stakeholders and potential future employers. Providing students with experiences that “as much as possible, the use of culturally valued means in order to enable, establish, and/or maintain valued social roles for people” (p. 131), also known as the normalization theory described by Wolfensberger & Tullman (1982). CBI has a focus of assimilating the student into the community with the intent of increasing their value and becoming an equal part of that community. Through task analysis, continuous assessment, technology instruction, and role-play activities, students are prepared to gain independence and autonomy and use and strengthened skills within the community (Hoover, 2016).

Community-based instruction aligns with the CCRS by providing students with opportunities to generalize the English language arts standards in both comprehension and collaboration skills and speaking and listening skills. Specifically, generalizing the standard of having the “ability to adapt and speak to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated appropriate” (NTTAC, 2018). Students also are expected to have the knowledge and skills to “employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice” (NTTAC, 2018). Community-based instruction provides opportunities for students to use these skills that are being taught in the classroom through CCRS standards to an applied setting.

**Community-based workforce instruction.** CBI not only provides opportunities for students to apply daily-living and functional skills into an applied setting, it provides opportunities for them to apply their career and technical skills in a more authentic environment and “increases work habits” (Dubberly, 2012, p. 36). Community-based workforce instruction is community-based instruction designed to specifically focus on employment and workforce skills
in a more natural authentic environment. Community-based career and technical education instruction provides students with career awareness activities such as job shadowing and internships that give opportunities to sample jobs for students to be matched to jobs that meet their strengths, interests, and preferences.

The data show that postsecondary outcomes for students with MSDs are not occurring at the same level as their typical peers (Wehman et al., 2014); however, outcomes do show more positive results when career and technical education skills instruction is included as a component of transition planning (Gold, Fabian, & Lueking, 2013; Wehman et al., 2016). According to IDEA (2004), development of transition plans is not only strength based, but centered around the student’s interests and preferences. According to the theory of occupational/career decision-making, an idea of evolution through the stages of life moves through a fantasy stage in which one focuses on the excitement of a career, to a tentative stage with a focus based on interests and personal capacity, to a realistic stage in which one appraises the field of options and makes realistic decisions (Ginzberg, Ginsburg, Axelrad, & Herma, 1951). Compared to a description of the life span approach, Super (1980) explains this process as career development rather than choice. He defines a career as “the combination and sequence of roles played by a person during the course of a lifetime” (Super, 1980, p. 282). For those students who struggle through this decision-making or development process, community-based career and technical education instruction is a method of instruction that allows for more direct instruction through this natural occupational/career decision-making process (Dubberly, 2012).

In a study by Kim and Dymond (2010), principals and special education teachers were interviewed about their beliefs concerning participation in community-based career and technical education instruction pathways. The results of that study showed that the perceptions of these educators were positive, indicating that community-based career and technical education
instruction increased likelihood of gaining and maintaining employment, increased independence and self-determination skills, increased appropriate work-related behaviors, and promoted generalization and better peer interaction. Overall, the belief that community-based career and technical education instruction prepared students for life after high school exists (Kim & Dymond, 2010). However, in a study of evidence-based practices used in implementing secondary transition instruction by Mazzotti and Plotner (2016), community-based career and technical education instruction was not listed as a practice used in transition instruction. In a study across four states (Utah, Oklahoma, South Carolina, and Colorado), only a third of students were reported to be involved in community-based career and technical education instruction, with only about 38% of those participating approximately 2 hours a week (Gripentrog, 2015).

In a review of the literature, Southward and Kyzar (2017) emphasized the importance of participating in paid employment, instruction in workforce skills, creating goals related to competitive employment, and participation in postsecondary education were among the primary predictors of competitive employment. Generalization of skills is a challenge that students with MSDs often must overcome. The real-world experiences that community-based career and technical education instruction provides for students increases the opportunities to generalize these workforce skills into a real-world experience (Walker, Uphold, Richter, & Test, 2010).

The 16 career clusters that make up the pathway options give students the opportunity for job sampling and career awareness that was described as best practices during community-based instruction (Luecking & Luecking, 2015). The Mississippi career and technical education curricula outlined by the Research and Curriculum Unit (2018) at Mississippi State University, includes clinical hours for many of the pathways. Clinical hours consist of practicing the workforce skills in a realistic, natural environment, a best practice described previously by Kim & Dymond (2010). Again, in the curriculum framework of each of the career and technical
education pathways, each course must include a placement into the related occupation to demonstrate skills (Research and Curriculum Unit, 2018).

**Career and Technical Education Enrollment**

Providing work-skill instruction through a career and technical education program is a more realistic way of preparing students to join the community to use both academic and job skills (Jordan & Dechert, 2012). The field of career and technical education “could be doing a better job of reaching more students and better training them once reached” (Jordan & Dechert, 2012, p. 1). However, of the population of students who enroll in career and technical education classes, 60% of students with disabilities will participate in at least one career and technical course (Cameto & Wagner, 2003). Of those 60% of students enrolled in career and technical education pathways, the perception of the placement of those students was indicated “very appropriate” by 86% of respondents in a survey to determine the extent of access to the general curriculum in career and technical education pathways for students with disabilities (Cameto & Wagner, 2003). For students with MSDs, 63% of respondents indicated that the placements in career and technical education pathways were appropriate (Cameto & Wagner, 2003). In a longitudinal study of career and technical education pathways and services, 71% of participants indicated the expectations for students with MSDs to keep up is present, while 70% do keep up with the general curriculum in career and technical education coursework (Cameto & Wagner, 2003).

**Barriers to Students With MSDs Participating in Career and Technical Education**

Although one cannot argue the value of career and technical education pathways for students with disabilities, many have identified barriers and issues that have decreased the effectiveness of these pathways for students. After reviewing the literature, issues that have been
addressed within the research including appropriate accommodations, goals, and liability (Dierterich & Smith, 2015) have been categorized into specific areas: teacher preparedness (Habor & Sutherland, 2008), collaboration and communication (Schmalzried & Harvey, 2014), and participation in IEP development and implementation (Harvey, 2001) are issues that are increasing the gap between research to practice and causing a roadblock for successful transition of students with disabilities.

**Teacher experience.** Teaching experience matters (Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). According to the Teaching and Learning International Survey (TALIS), a positive correlation exists between effective teaching and years of experience in the (Organization for Economic Co-Operation and Development, 2009). Teaching experience influences the general perceptions about teaching and learning (Berger, Girardet, Vaudroz, & Crahay, 2018). Although experience is a factor, more does not always mean better. Clough and Lindsey (1991) found that younger teachers had a more positive attitude toward inclusion. The first few years of teaching has the highest effect on teaching effectiveness with decreasing effectiveness as the years increase (Rice, 2010).

**Teacher education.** An argument exists over the importance of pedagogy versus content knowledge (Darling-Hammond & Bransford, 2005). How to teach and what to teach are both equally significant factors and need to be balanced in effectively implementing instruction (Treeton, 2007). Teacher training has been identified as a factor in positive inclusion of students with disabilities into general education pathways (Avramidis & Norwich, 2010). NCLB (2001) called for teachers to be highly qualified, causing staffing to become a critical need.

In Mississippi, poverty has not only impacted the students who are taught, but also the recruitment of quality teachers into its educational systems (Boggan, Jayroe, & Alexander, 2016). Many individuals making career choices do not go into teaching as a profession or change
professions after a few years, causing a teacher shortage for the state (Boggan et al., 2016). The development of alternate-route certification was proposed and implemented as a solution to alleviating the teacher shortage for the state of Mississippi (Boggan et al., 2016; Dukes, Darling, & Doan, 2013). Alternate-route certification is a pathway for individuals with a noneducation degree to gain teaching licensure through teacher-preparation coursework and support through mentorship (Boggan et al., 2016).

Teacher certification has a significant effect on student achievement according to Darling-Hammond (2009). Effectiveness of teachers is unclear throughout the body of literature (Darling-Hammond, 2009). According to the National Center for Education Data, 33% of career and technical education teachers are teaching through an alternate-route teaching certification (Feistritzer, 2011). The rising number of alternate-route teachers is surprising and possibly problematic. Although these programs have aided in alleviating some teacher shortages, the structure of the alternate-route programs needs to be examined with a teacher candidate entering classrooms prior to completing training (Darling-Hammond & Skyes, 2003). The teaching experience that Darling-Hammond and her colleagues (2005) described as necessary may be lacking through alternate teacher-certification pathways (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006).

**Community characteristics.** The socioeconomic status of a community also impacts effective learning environments (Ratliff et al., 2017). Teacher experience has already been identified as a factor; however, higher poverty areas employ more inexperienced teachers, as well as less-effective experienced teachers (Rice, 2010). A little over 20% of Mississippi is below the poverty line and $40,000 is the median income for Mississippi families according to the United States Census Bureau (2018).
Teacher preparedness. Ayers (1999) described the profession of teaching as “excruciatingly complex, idiosyncratic, backbreaking, mind-boggling, exhausting, and wrenching” (p. 52). To offset this type of work, professional development is a tool that is highly recommended and deemed a requirement (Cannon, Kitchel, & Duncan, 2010; Ludwig, Kirshstein, Sidana, Rey, & Bae, 2010). Teachers themselves indicate the need for more professional development, specifically on teaching students with disabilities (Wehby & Kern, 2014). Limited teaching experience and alternate-route certification also increase the need for more professional development, especially in the areas concerning students who are significantly cognitively delayed. Lampert (2010) describes teaching as a “practice” (p. 21) and explains the term “learning to teach” (p. 21) is not acceptable due to it being a future task. “Learning teaching” (p. 21) is the action that suggests we learn to teach as we teach (Lampert, 2010). The skill of teaching is a constant learning experience.

Ruppard, Roberts, and Olson (2014) compiled a detailed list of characteristics of an expert teacher of students with severe disabilities. Teaching identity, purposeful teaching, and focus on the individual student were the three most frequent concepts. A teacher’s ability to be a “lifelong learner” (Ruppard et al., 2014, p. 246), advocate for students’ best interests, and collaborate with parents, students, and professionals invested in the students’ educational performance creates his or her identity. The identity of the teacher drives the systematic instruction that is focused on the individual student and his or her needs.

Lack of preparation has been identified as a barrier to inclusive classroom environments by teachers (Avramidis, Bayliss, & Burden, 2000; Fuchs, 2010). Implications of many research studies have identified professional development as a resolution to closing this barrier in education (Beuell, Hallam, Gamel-McCormick, Scheer, 1999; Fuchs, 2010; Kamens, Loprete, Slostad, 2000). Avramidis et al. (2000) found more positive attitudes and less resistance toward
inclusion of students with disabilities in general education through the development of professional development.

**Professional development in transition.** Professional development specific to the area of postsecondary transition is an emerging field. The literature base is growing as postsecondary outcomes are examined and evidence for what works is identified. Doren, Flanery, Lombardi, and Kato (2012) analyzed the quality of 137 IEPs pre and post professional development, although teachers did not become fluent in the development of postsecondary goals, higher rates of meeting transition indicators were scored post professional development. Again, Flannery, Lombardi, and Kato (2015) review 309 IEPs pre and post professional development and found statistically significant improvements in development of postsecondary goals for education, employment, course of study, and independent living. Examining a partnership between a university and school, Klinger, Ahwee, van Garderen, and Hernandez (2004) identified one result of the differences in achievement and performance being so much higher for one district was the strategies that were taught through the partnership. Although there is a limited quantity of research in professional development specific to transition, the evidence of effectiveness of professional development and growing in the professional should generalize across the curricula.

**Transition professional development for career and technical teachers.** Career and technical education teachers identified a strong weakness in teaching students with disabilities (Palmer & Gaunt, 2002; Ruhland & Bremer, 2002). In this qualitative study, teachers discussed a lack of professional development, both preservice and in service, in teaching students with disabilities. Several studies support a strong need for an increase in preparation of teaching students with disabilities in a career and technical education program (Cannon et al., 2013; Ruhland & Bremer, 2002; Wehby & Kern, 2014). A second area identified was curriculum planning. Curriculum planning is an essential factor in teaching students with disabilities (Palmer
According to the National Center for Education Information, 33% of career and technical teachers are teaching through an alternate-route teaching certification (Feistritzer, 2011).

Educators who teach in the career and technical education programs bring an in-depth content knowledge to the classroom (Kerna, 2012). Their industry experiences enhanced and increased their knowledge of what to teach students to be successful in specific career fields. Treeton (2007) indicates there is a need for a balance in pedagogy and content knowledge.

In Kerna’s (2012) study about how to find appropriate professional development for career and technical educators, a limited or lack of knowledge to incorporate in appropriate activities to meet the needs of students with disabilities was one theme that emerged. In her discussion of results, Kerna (2012) concluded that professional development needed to be adapted to the specific needs of the student and the content of the course.

Although content knowledge of career and technical education educators is strong, there is a lack of basic knowledge of pedagogical theory for successful implementation of career and technical education programs to students with disabilities (Kerna, 2012). The ability to identify appropriate supports to meet the needs of students with MSDs in an inclusive career and technical education classroom improved the attitudes toward including these students (Casale-Giannola, 2012). One theme that developed through the self-reflection of professional development needs of career and technical education educators included the awareness of “unique learning needs” combined with a lack of knowledge to “know how to incorporate activities that address these needs into each lesson” (Kerna, 2012, p. 41).

Classroom management and the ability to supervise both behavior and instruction that increased off-task behavior was also identified as an area of weakness for career and technical education teachers being prepared to create an inclusive classroom (Casale-Giannola, 2012).
Career and technical teachers are often unprepared for serving this population of students (Habor & Sutherland, 2008). In-service training opportunities were also recommended by Johnson, Wilson, Flowers, and Croom (2012) to improve teachers’ perception of the inclusion of students with special needs into career and technical programs.

To obtain a teaching license for teaching in a career and technical education program, people have three options. Noneducation-degree applicants with less than a bachelor’s degree must hold an associate to a doctoral degree, have at least two years of occupational experience in the past ten years related to the desired teaching field, and be enrolled in the New Teacher Induction program (NTI) through the Research and Curriculum Unit to gain a 3-year nonrenewable teaching license (Mississippi Department of Education, 2018d). The NTI program is Year 1 of the Vocational Instructor Preparation program (VIP). To gain a 5-year renewable license, renewal requirements must be met by completing the Best Practice Workshop during Year 1, attaining the established minimum score or higher on occupational assessments approved by the Mississippi Department of Education, establishing a minimum score or higher on the technology competence assessment approved by the Mississippi Department of Education, and completing all requirements through the NTI program (Mississippi Department of Education, 2018c).

Noneducation-degree applicants with a bachelor’s degree must hold a bachelor’s degree or higher, at least one year of occupational experience in the past 10 years related to the desired teaching field, and be enrolled in the NTI program through the Research and Curriculum Unit to gain a 3-year non-renewable teaching license and complete the Best Practice Workshop (Mississippi Department of Education, 2018c). To obtain the 5-year renewable teaching license, applicants must continue through the VIP program and validate occupational competency during the first 3-year period or obtain a bachelor’s degree in the specific area to be taught or attain
minimum or higher scores on the occupational and technology competency assessments, and complete the VIP program during the first 3 years (Mississippi Department of Education, 2018c). Endorsements for grades 7-12 are available for Career Technical Agriculture-Related programs, Career Technical Occupations, Lodging and Hospitality, and Career Technical Family and Consumer Science (Mississippi Department of Education, 2018c).

The NTI and VIP programs were developed by the Research and Curriculum Unit at Mississippi State University and the Office of Career and Technical Education at the Mississippi Department of Education (Mississippi Department of Education, 2018c).

**Vocational instructor preparation program.** The VIP program consists of six modules: instructional planning, instructional strategies, classroom assessment, classroom management, mentor relationships, and administrative relationships. The six modules are spread out across a 3-year timeline to support teachers as they begin their career as a career and technical educator. A professional portfolio is used to document progression through each module (Research and Curriculum Unit, 2019).

The NTI program is implemented the first year of the VIP program to aid teachers through their first year of teaching in a career and technical program through professional-development activities and instruction. Professional-development learning modules provide participants with teacher preparation instruction that includes the history and philosophy of career and technical education, best teaching practices, classroom management, and teaching students with disabilities (Research and Curriculum Unit, 2019).

Professional-development opportunities are both included and required within the state plan for career and technical educators as participants complete the VIP program. Annual professional development is provided through the Mississippi Department of Education and the
Collaboration and communication. Collaboration among multidisciplinary team members is imperative to establishing a strong transition plan and carrying it out effectively (Agrin et al., 2002; Davies & Beamish, 2009). Collaborative conversations among outside agencies are vital as well as other conversations among general education and special education teachers, parents and families, the student, administration, educational service provides, potential employments, and community service providers to fulfil an appropriate education. Consistent collaboration in student performance, progress toward goals, and assessment results keep a student-centered approach to providing appropriate services and instruction (Test et al., 2006).

Career and technical education educators can play a vital role in IEP development and implementation. Participation in the IEP planning and evaluation meetings is imperative in delivery of appropriate instruction, supports, and services to students receiving special education services. Although special education teachers typically lead the conversations in recommendations and available options, career and technical education teachers bring knowledge of needed skills and potential supports (Kerna, 2012). Demands from instruction and the environment also can be gained through the active participation of career and technical education educators (Wonacott, 2001), resulting in well-informed placement decisions by the multidisciplinary team (Habor & Sutherland, 2008). Career and technical education educators can also provide assessments for aptitude, skill, and readiness in their area of work-skill-related instruction (Wonacott, 2001).

Collaboration and communication between career and technical education teachers and special education teachers is included as a necessary component of interagency and interdisciplinary collaboration (Kohler & Field, 2003) and is critical to student success in career
and technical education pathways (Harvey, 2001; Wonacott, 2001). Wonacott (2001) describes the role of the career and technical education teachers as primary team member in the transition process of students with MSDs during both the planning and implementation phases of transition. Career and technical education teachers provide information, support, assistance, and instruction for students with MSDs. Career and technical education teachers have access to tools that assess student’s readiness for work skills and can provide information on the demands of instruction and setting of career interests (Wonacott, 2001).

However, the disconnect between the career and technical education teacher and the special education teacher has been identified as a concerning issue in the planning, development, and implementation of transition plans that include career and technical education pathways (Test et al., 2006). In a study conducted by Schmalzried and Harvey (2014), the perceptions of communication and collaboration was explored in the state of Indiana and identified effective communication and collaboration strategies that were currently being used. Although a willingness existed among participants to support the students with disabilities by working together, the data from their study supported the literature showing a large area of needed improvement (Schmalzried & Harvey, 2014). With 21.7% of career and technical education educators responding that there was no communication at all between them and the special education teacher, a true problem exists as a barrier to effective and successful instruction in career and technical education pathways (Schmalzried & Harvey, 2014).

Collaboration and consultation for both academic content-area support and conflict resolution have been recommended to improve inclusive career and technical education classrooms (Casale-Giannola, 2012). Without effective communication and collaboration among special education teachers and career and technical education teachers, a lack of participation of
all team members becomes evident in the planning and development of individualized education plans.

**Participation in IEP development.** One recommendation made concerning efficacy of career and technical education programs regarding postsecondary employment outcomes is participation of career and technical education teachers during IEP meetings (Harvey, 2001). Participating as a multidisciplinary team member in the planning and development of transition goals and instruction on the IEP is required by IDEA (2004). However, in the study conducted by Schmalzried and Harvey (2014), participants were asked about their invitations and attendance to IEP meetings. Career and technical education educators indicated a mean of 2.5 on a 4-point Likert scale with 2 indicating disagree and 3 agree. According to the National Center on Secondary Education and Transition (2009), only 40% of career and technical education educators are actively participating in the transition-planning process.

**Participation in IEP.** Assisting in placement decisions, assisting in implementation of the IEP and recording progress, participation in development of IEP by making recommendations for appropriate accommodations and/or modifications, and advocating for students during IEP development are solutions offered by Habor and Southerland (2008) to manage the appropriate placement and effective participation of students with disabilities in career and technical education programs.

Attendance and participation in IEP meetings by career and technical education teachers allows representation of the technical area to be present at meetings. Career and technical education teachers can address the labor market needs, discuss appropriate accommodations and modifications that are realistic for the course requirements and expectations to better match students’ interest and abilities to provide a realistic job opportunity for students with disabilities (Harvey, 2001).
**Student ability.** Students with disabilities that are moderate to severe have deficits that require extensive supports and services. In the Johnson et al. (2012) study of a teacher’s perceptions of including students with special needs in a North Carolina high school agriculture education program, student ability was identified most frequently as a perceived barrier. Students lacking communication, physical, cognitive, and social skills require not only extra supports and services, but also needed extended time to practice the skills being acquired.

Students seeking to become completers of career and technical education pathways are required to pass the Mississippi Career Planning and Assessment System (MS-CPAS). This assessment determines student’s readiness into the related career pathway and provides accountability by evaluating not only the performance of the student but the validity of the career and technical education program (Mississippi Department of Education, 2018c).

According to the structure of the Mississippi career and technical education framework, Students enrolled in a career and technical education pathway will be supported academically through the infused academic content as well as workforce content through structured hands-on learning opportunities. The most recent plan for these pathways is designed to collaborate closely beginning in seventh grade with counselors from both the general education curriculum and the career and technical education curriculum to begin identifying and preparing students for performance within these pathways based on interest and ability (Mississippi Department of education, 2008).

**Closing the Gap**

To begin to address the greater “significant social problem” of declining employment rates among individuals with disabilities, a starting point must be established (Certo et al., 2008, p.87). Through a review of literature, improvements in transition planning must be developed. A
transition-centered approach to secondary education has been a proposed as a possible solution, with a taxonomy of transition to structure being developed by Kohler and her colleagues (2016). Walker et al. (2010) reported a need to direct future research to workforce training. Career and technical education pathways have been identified as a “viable option for students regardless of their academic ability, social skill competence, or intentions for post-secondary education” (Dieterich & Smith, 2015, p. 60).

Career and technical education is where this study begins as a means of addressing a larger social challenge. Although through the review of literature and career and technical curricula, evidence-based practices found to improve outcomes of students with MSDs in transition instruction are embedded practices within the structure of career and technical education framework. However, lack of participation among students with MSDs has been established and barriers to teaching and including students in the career and technical education pathways have been identified (Dieterich & Smith, 2015; Casale-Giannola, 2012). The primary intent of this study is to understand the attitudes, dispositions, and perceived barriers of career and technical education teachers. The results from this study will later be used to address the needs of those teachers to help close the gap between research and practice.

Although career and technical education classrooms have been identified as a potential “model of inclusion instruction” (Casale-Giannola, 2012, p. 41), the barriers that have been identified have created a gap in research to practice. Common barriers to community-based career and technical education instruction were identified as a possible causal factor in limited utilization of community-based workforce instruction practices. In Kim and Dymond’s (2010) study of educators’ perceptions of community-based career and technical education instruction, barriers included funding, access, transportation, and preparation time for teachers. Gripentrog (2015) identified the same barriers and also added lack of staffing and resources to the list. She
concludes her study by identified “facilitators” (p. 18) of community-based career and technical education instruction to enhance effectiveness of community-based career and technical education instruction including flexible schedules, administrative support, established job sites, adequate staffing, and access to transportation (Gripentrog, 2015). The need for addressing these barriers and improving the facilitators is vital; however, in the meantime, students must still be provided meaningful transition instruction. In a review of the trends in career and technical research, Rojewski, Asunda, and Kim (2008) found a lack of research relating to including students with disabilities in the career and technical pathways. Further research in this direction is needed. Walker et al. (2010) also reported a need for more research specific to career and technical training. This study will seek to identify the personal perspectives, dispositions, and perceived barriers of Mississippi career and technical education teachers.

**Personal Perspectives**

Developing positive attitudes is a predictor of effective teaching (Proctor & Neimeyer, 2001). In a review of the literature, general education teacher participants were not supportive of inclusive practices (Scruggs & Mastropieri, 1996). The needs and supports of students with MSDs affects teacher attitudes (Avramidid & Norwhich, 2010). Triandis (1971) claimed that attitudes cause behaviors. If this statement is true, then improving attitudes could improve behaviors or dispositions of teachers.

Before anything can be changed within the implementation of instruction to improve the outcomes of students with MSDs as they transition from high school to postsecondary career or education, teachers must believe there is a need and see a need for change. In a study of teacher attitudes toward inclusion of students with disabilities, Wilson’s (2014) results revealed that although positive attitudes of including students with disabilities in general curriculum existed,
the positive attitudes were more about the theory of the idea than the practice. Actual practices of inclusion of students lead to a greater trend toward negative attitudes (Wilson, 2014).

The climate of the classroom impacts student achievement (Ratliff et al., 2017). Neimeyer and Proctor (2002) identified a positive attitude as a predictor of effective teaching. Attitudes combined with social norms and perceived control have a direct correlation with behavioral intentions (Ajzen, 1991). Jones, Yonezawa, Mehan, and McClure (2008) found a positive correlation between the students’ performance in the classroom and “personalization,” the perception of acceptance ability to fit in within that learning environment (p. 11). Feeling accepted in your immediate environment is a natural desire; however, for a learning environment, it is imperative (Tschannen-Moran, Bankole, Mitchell, & Moore, 2013). Teachers need to display an attitude of care and confidence in the student’s ability. A student’s ability cannot impact how the teacher responds to students (Tschannen-Moran et al., 2013). However, Avramidid and Norwhich (2010) found that the more significant the disability and the more needs and supports a student has impacts the attitudes of teachers negatively.

**Dispositions**

For this study, dispositions were defined as the behaviors of the teacher inside and outside the classroom related to how they prepare and teach. The practices used to implement instruction for students with disabilities is also a significant factor in the effectiveness of instruction (Wilson, 2014). The amount of research identifying evidence-based practices for students with MSDs is increasing. Success and student achievement occur when appropriate learning environments are created by understanding the process and conditions of student learning are created when teachers construct appropriate (Muijs, van der Werf, Creemers, Timperley, & Earl, 2014).
Helm (2007) found that positive dispositions not only affect student performance but also can be the “key” to reaching students (p. 109). Activities that increase student engagement increase students’ improvement (Jones et al., 2008). Harris and Herrington (2006) found that small-group instruction with a focus on analysis and inferencing, problem-solving, and generalizing is appropriate for students at-risk. Supporting those findings, Downer, Rimm-Kaufman, and Pianta (2007) found the teaching strategies, large group, memorization, and individual assignments increased the rates of off-task behavior in the classroom. The strategies used in the classroom impact student performance and should be a consideration of an appropriate learning environment for students with MSDs.

Common themes identified among researchers including qualification (Paju, Raty, Pirritimaa, & Kontu, 2015), teacher preparation (Avramidis et al., 2000; Johnson et al., 2012; Palmer & Gaunt, 2002; Webby & Kern, 2014), and lack of knowledge (Fuchs, 2010) show a need for professional development. Avramidis et al. (2000) discussed the importance of professional development concerning the attitudes of teachers teaching students with disabilities. Opportunities to develop learning environments that enhance positive expectations of students’ success are critical (Tschannen-Moran et al., 2013). Teachers who participate in meaningful special education trainings report a significantly higher rate of positive attitude toward teaching students with disabilities (Avramidis et al., 2000). Participating in professional-development opportunities enhances and increases effectiveness of instruction for all students receiving special education services.

Understanding that effective practices of teaching students with MSDs are already present in their classrooms or could be easily developed through professional development. Knowledge of student and pedagogy was addressed first, followed by providing purposeful, meaningful instruction, explicit skills instruction, using time effectively, and creating a
classroom that cares (Benedict, Brownell, Park, Bettini, & Lauterback, 2014). Believing that students can succeed, evaluation and self-reflection, and willingness to try your own ideas were all described as dispositions that define effective teaching in special education (Benedict et al., 2014). Most of these characteristics described have already been identified as present in the career and technical education literature. Kerna (2012) describes the presence of pedagogical knowledge, and Hoover (2016) describes the innovative and “authentic” environments in which instruction best occurs. The curriculum framework also describes meaningful and purposeful teaching as a component of each program (Research and Curriculum Unit, 2018).

**Perceived Barriers**

The literature has already identified teacher attitudes as a significant barrier to implementing effective instruction in inclusive classrooms (Avramidis & Norwich, 2010; Ross-Hill, 2009). However, this is not the only barrier to inclusive practices in education. Teachers need to be able to voice their concerns about teaching students with MSDs to decrease the apprehension they have about meeting individual needs of those students (Proctor & Neimeyer, 2001). Identifying barriers that impact personal performance is a component of self-reflection, a characteristic of quality teaching in special education (Watts, 1985; Benedict et al., 2014). This is a basic concept of problem-solving; identifying the problem before there can be a solution. According to Watts (1985), self-identifying barriers leads to higher rates of positive change.

In a study to examine the perceived barriers of general education teachers associated with inclusion, Fuchs (2010) used qualitative data to sample a small population. In her study, daily challenges within the classroom were identified by the teachers, which increased the level of support, impacting the teacher by increasing confidence and improving attitudes toward teaching in an inclusive environment (Fuchs, 2010).
Addressing or eliminating barriers that have been identified by teachings can improve attitudes and behavior (Lewin, 1936). The perspectives of teachers and their beliefs about their teaching circumstances impacts their attitude and effectiveness as a teacher (Avramidis & Norwich, 2010). Teachers become more effective when they are encouraged to be reflective (Watts, 1985). Education is a “community affair” (Leslie & Camargo-Borges, 2017). Communication among this community of educators is vital in keeping a consistent and effective learning environment. Identifying challenges within your role in the teaching process allows for the networking and collaborative process that is vital to effective instruction (Jones et al., 2008).

Summary

Predictors of postsecondary outcomes include career awareness, community experiences, independent living, inclusion in general education, interagency collaboration, occupational courses, parent expectations, parental involvement, program of study, self-determination, social skills, student support, transition program, work experience, and career and technical education (Test, Bartholomew, & Bethune, 2015). Of these listed predictors, a large majority of them are components of career and technical education. Although we know they exist in the structure of the career and technical pathways, we also know that the instructors who provide this instruction are hesitant to include students with MSDs in their IEP. Through the barriers discussed throughout the body of literature, barriers for this response lean toward support and knowledge of teaching students with MSDs. An increase in professional development that focuses on teaching students with special needs through either pre-service or in-service training will improve attitudes about inclusion of these students and begin closing the gap between research and practice and ultimately improve the outcomes of students in gaining and maintaining employment for more successful transitions into life.
Jones et al. (2008) described that the means of increasing student achievement is by improving learning environments for all students by first focusing on attitudes, values, and beliefs. A person’s behaviors are a result of who a person is and their perception of the environment in which they are placed (Lewin, 1936). This study will explore the career and technical education teachers’ perspectives of including students with MSDs in career and technical education pathways by first examining the attitudes, dispositions, and perceived barriers of those teachers. A better understanding of how career and technical educators feel about including students with MSDs in their classrooms will give the opportunity to reduce or eliminate barriers, increase positive attitudes, and improve effective learning environments for the students.
CHAPTER III
METHODOLOGY

The purpose of this chapter is to outline the methods that were used to learn the attitudes, dispositions, and barriers toward teaching students with MSDs perceived by Mississippi career and technical education teachers toward teaching students with MSDs. The knowledge gained through obtaining the attitudes, dispositions, and perceived barriers of career and technical education teachers toward teaching students with MSDs was used to answer the research questions and formulate a beginning to understanding needs to aid in increasing positive outcomes of students with MSDs as they transition into life after high school. The following chapter is comprised of the following sections: participants, setting, procedures, research design, instrumentation, data collection, data analysis, and summary.

Participants

“The work of researchers is best rooted in the communities they aim to serve” (Brann-Barrett, 2014, p. 75). Data were collected throughout the entire state of Mississippi, in hopes to get a generalized perspective of career and technical educators and their attitudes, dispositions, and barriers to teaching students with MSD. Mississippi is considered primarily a rural geographical location with an estimated population of 2,984,100 (U.S. Census Bureau, 2018). Approximately 12% of the population has been identified as having a disability (U.S. Census Bureau, 2018).
The state has an 84% high school graduation rate; however, only 21% of the population obtain a bachelor’s degree or higher. An estimated 57% of Mississippians are included in the civilian labor workforce (U.S. Census Bureau, 2018). The average household income is $40,528, with almost 21% of the population living in poverty (U.S. Census Bureau, 2018).

Criteria for participation in this study included employment in a full-time (10-month) teaching position in a Mississippi public school career and technical education center for secondary occupational career and technical programs. Two hundred and forty-nine responding teachers from the population of Mississippi career and technical education teachers that estimated 800 were needed to maintain a 95% confidence level, with a +/- 5% margin of error.

**Procedures**

Once the internal review board (IRB) granted approval, an email was sent to each career and technical education director in Mississippi with information and explanation of the study. The directors were asked to distribute the surveys to their teachers via email. The Mississippi Department of Education maintains an annually updated list of teachers and administrators, including career and technical faculty. A list was retrieved from the Mississippi Department of Education’s Office of Career and Technical Education. Surveys were sent to approximately 800 teachers at 147 different high school career and technical programs in the state of Mississippi via email. To get a more generalized opinion of teacher perspective, all responses were included in the analysis to increase generalizable results. Informed consent was sent as an initial email to each teacher based on the list provided by the Mississippi Department of Education. The initial email included an explanation of the study, benefits of the results, and a link to the survey. An initial deadline to respond was included for 2 weeks from the date received. At 1 week past the initial email, a second email was sent reminding teachers of the benefits of gaining the
information from the survey. A final reminder email was sent the morning of the deadline. With a low response rate at the end of the 2 week window, an additional 2 week window was added to gain more participation.

Data for this study were collected using an online method. SurveyMonkey was chosen due to the benefit of confidentiality, as well as ease of distribution and collection. Emails of explanation and clarification were sent to career and technical education directors first. Then participants were asked to complete the survey through the aforementioned online survey software. Once a response to the survey was received, an email was sent to show appreciation for participation in this study. This sequential approach of online-based methodology has been found to improve the response rates of participants (Stern, Bilgen, & Dillman, 2014).

**Concern for Human Subjects**

This study was approved by the IRB and permission was granted for each participant. Informed consent included detail about the study and any risks involved. Risks associated with this study were limited. Time and effort to complete the study as well as a reflection of one’s personal beliefs could be potential risks. At any time during the survey, participants will have the option to not answer any item that they are not comfortable providing a response for.

Data collected from each participant remained confidential. SurveyMonkey did not elicit identifiable data. Although initial information and link to surveys was sent via email, the returned response was collected through the SurveyMonkey software and not connected to individual emails. Any identifiable data that was collected through any email correspondence of the initial survey was destroyed. All survey responses were kept on a private computer that was password protected, with the password known only by researcher. The encrypted data was only reviewed by the researcher and statistician.
Participants were informed that no financial compensation would be associated with this study. However, potential benefits from participation included a self-awareness of one’s own personal biases and beliefs. Participants may have experienced a paradigm shift of how they view inclusion of students with MSDs into the career and technical education classroom and gain a better understanding of the possible benefits of actively including these students into their instruction.

**Research Design**

This study is designed using the principles of Dillman, Smyth & Christian’s (2014) design for Internet surveys through a nonexperimental survey research design. Descriptive explanatory analysis of the research helped describe attitudes and perceptions of Mississippi’s career and technical education teachers toward including students with MSDs in career and technical education pathways. An analysis was examined to identify common themes or any new themes that exist among the attitudes and dispositions of career and technical education teachers including students with MSDs in their career and technical education classrooms. The researcher also sought to identify perceived barriers among career and technical education teachers toward inclusion of students with MSDs in their career and technical education pathway. An analysis of those barriers was examined for new barriers identified.

According to Johnson, Wilson, Flowers, and Croom (2012), there is a correlation among attitudes and training in the inclusion of students with MSDs. To conduct this study, a survey was developed to explore attitudes and dispositions toward effective teaching methodology for students with MSDs and participation in professional development related to teaching students with MSDs. Online or “web-pushed” surveys have been found to be more effective and more cost-effective than paper surveys (McMaster, LeardMann, Speigle, & Dillman, 2016). Therefore,
the survey instrument was distributed via an online method to a readily available target population. This online method was chosen to best suit the needs for confidentiality, organization, and cost-efficiency. Also, to promote a generalized viewpoint, this method was most suitable for distributing to a large sample size. Other advantages to the design of this research is the ease of monitoring the data and the ability to send follow-up and reminder notices.

Instrumentation

An online survey instrument was designed to allow for a larger population of participants to be included in this study (Dillman, Smyth & Christian, 2014). The survey was designed to meet the needs of the population of interest, a suggestion presented by Dillman, Smyth, and Christian (2014) and get down to the “heart of the research” (Simon & Goes, 2016). Career and technical education teachers are based in a technology world and therefore a primary mode of communication is via online methods. A mixed-mode survey instrument offers a variety of response options to increase obtaining a realistic representation of the participants’ responses (Dillman, Smyth, & Christian, 2014). The instrument used in this study was titled Career and Technical Education Teacher Perspective of Serving Students with Moderate to Severe Disabilities. The 44 survey items were developed based on Kohler and her colleagues’ (2016) Taxonomy for Transition Programming 2.0 and evidence-based best practices for teaching students with MSDs that has been identified in research. Effective collaboration (Harvey, 2001; Wonacott, 2001; Kohler & Field, 2003), community-based instruction (Hoover, 2016; National Technical Assistance Center on Transition, 2018), community-based career and technical education instruction (Dubberly, 2012; National Technical Assistance Center on Transition, 2018), and interagency collaboration (Kim & Dymond, 2010; Morningstar et al., 1999; Noonan
et al., 2008; Oertle & Trach, 2007) have all been linked to positive outcomes through transition instruction. The survey questions were developed by the researcher with some questions being modeled after Johnson et al., (2012). The survey consisted of six sections: Section 1: informed consent and voluntary participation, Section 2: demographics, Section 3: personal perspectives, Section 4: dispositions, Section 5: perceived barriers, and Section 6: reflective comments. Informed consent was included as section one to provide an explanation of the study, potential risks involved, and instructions and time lines for participation. Voluntary consent to participate was obtained in section 1 prior to moving through the remained of the survey.

**Demographics.** Section 2 collected the demographic information. Demographics were used to provide descriptive statistics of participating career and technical teachers. The items in this section (see Appendix A) helped describe participated and understand the current classroom environment.

**Personal Perspectives.** Section 2 collected data on the teachers’ attitudes and beliefs toward the inclusion of students with MSDs in their career and technical programs. On a Likert scale of 1 (strongly disagree) to 10 (strongly agree), teachers rated each of the statements in this section.

**Dispositions.** Section 3 collected data regarding the dispositions of the career and technical teacher. Due to the risk of giving a socially desired response, looking at specific classroom behaviors supported a more realistic view of how inclusive the classroom is (Avramidis & Norwich, 2010). Dispositions were based on frequency of use of best practices including collaboration among parents and general education, special education, and career and technical teachers participating in the multidisciplinary team planning and implementation of transition plans, as well as participation in professional-growth opportunities, utilizing community-based instruction, and establishing interagency collaboration. Teachers used a Likert
scale from 1 (never) to 10 (always) to rate the frequency of evidenced-based practices incorporated into in their daily instruction.

**Perceived Barriers.** Section 4, consisting of items 29-38, collected data on perceived barriers that impact effective delivery of instruction in the career and technical education course. Using a Likert scale, barriers were rated from 1 (not at all) to 10 (significantly affects) to determine the perceived impact of barrier on including students with MSDs in the career and technical education pathways.

**Reflective comments.** The final section of the survey, items 39-40, was an opportunity to expound on Likert-scale responses where teachers could address challenges, ideas, or suggestions that had not already been discussed in the survey items. Adding this additional mode of response increased the accuracy of responses given by participants (Dillman, Smyth, & Christian, 2014). Reflection items provided a more personalized perspective to potentially gain a deeper understanding of the perspectives, disposition, and barriers these teachers recorded during the survey.

**Validity of Survey Instrument**

The 40-item survey was sent to five expert reviewers to examine for content validity using the Survey/Interview Validation Rubric for Expert Panel – VREP (Simon & White, 2014). Validating a study through expert review identifies potential problems in questions and the language of questions (Olson, 2010). The expert reviewers held positions in leadership within career and technical education environments. The five selected experts held positions as career and technical education curriculum writers and district directors within the state of Mississippi.

The assessment instrument evaluated content validity and construct validity (Simon & White, 2014). Expert reviewers in the field of career and technical education are familiar with...
the evidence-base of strategies used in special education. The review of the survey also assisted in decreasing the possibility of bias within the language of the survey. Reviews were conducted independently and returned with feedback. The feedback gained from the review has been found to be valuable in finding errors within the survey items (Olson, 2010).

The survey was modified based on feedback given through the rubrics. Changes included reduction of special education jargon that may be unfamiliar to career and technical education teachers. Needed terminology that may be unfamiliar was given clear definitions, and a revision was made to the list of highest degree earned to include an associate degree to the optional route for career and technical education licensure. Rubrics are provided in Appendix E.

Data Collection

This study was designed to increase the anonymity of the participants. Data were collected from the responses from survey questions administered through the online survey software, SurveyMonkey. Survey responses remained anonymous to improve the validity of responses. All survey responses were included in data analysis to increase generalization of results. Once emailed, the survey was available to participants for a 4-week period, the initial 2 weeks, plus a 2-week extension. After the 4-week period, survey results were collected for analysis.

Data Analysis

A descriptive analysis determined standard deviations, frequencies, percentages, and means of the perspectives, dispositions, and perceived barriers of Mississippi career and technical educators including students with MSDs. Quantitative descriptive data were calculated using the descriptive statistical analysis software within SurveyMonkey.
An interpretive qualitative analysis was used to examine the responses to the open-ended item on the survey. The responses to these items were coded into nodes to develop common themes among the participating career and technical education teachers. The responses were examined for any emerging variables that are consistent among Mississippi career and technical educators. The qualitative analysis of the open-ended question was conducted using NVivo software, Version 12. Word frequency and themes of comments were used to divide comments for analysis of frequency.

Table 3 provides the relationship of the survey item and the corresponding research question(s).

Table 3

Research Questions, Survey Items, Methods of Analysis

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Survey Items</th>
<th>Methods of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the personal perspectives of Mississippi CTE teachers regarding including students with MSD (e.g., are CTE program valuable for students with MSD)?</td>
<td>10-19, 42-43</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coding/thematic analysis</td>
</tr>
<tr>
<td>What are the dispositions of Mississippi CTE teachers regarding including students with MSD (e.g. What are the behaviors of CTE teachers that currently align with EBP)?</td>
<td>20-29, 42-43</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coding/thematic analysis</td>
</tr>
<tr>
<td>What are the barriers towards including students with MSD in CTE programs perceived by Mississippi CTE teachers?</td>
<td>30-41, 42-43</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coding/thematic analysis</td>
</tr>
</tbody>
</table>
CHAPTER IV
FINDINGS

Introduction
The purpose of this research study was to understand how career and technical education teachers feel about including students with MSDs in their current classrooms and its appropriateness as a transitional learning environment to increase positive postsecondary outcomes of students with MSDs in the Mississippi public school system. Understanding the viewpoints of teachers who are directly teaching students with MSDs within a career and technical setting is important information that could help professionals move toward improved outcomes for students with MSDs. Gathering such information has been identified as an evidence-based practice. The data provide insight into how career and technical teachers feel about students with MSDs being included in their career and technical education pathway. The researcher utilized both quantitative and qualitative methods to identify how teachers perceived the career and technical education program as an appropriate means of transitional instruction for students with MSDs. Topics of survey items were selected based on the evidence-based practices in postsecondary transition instruction to identify career and technical teachers’ personal perspective, disposition, and perceived barriers in utilizing the career and technical education learning environment for these students. Survey items included Likert-scale statements with opportunities for participants to provide further comments as well as an open-ended question to provide additional understanding.
Overview of the Findings

The results of 109 participating career and technical education teachers from across the state of Mississippi were analyzed to identify personal perceptions of career and technical education teachers toward inclusion of students with MSDs in their classrooms. Results of the data gathered through SurveyMonkey show a promising possible option for improving the postsecondary outcomes for students with MSDs within the career and technical education classroom. The data reflect that a large portion of career and technical teachers not only feel that the career and technical education classroom is an appropriate place for students with MSDs, but they also believe that there are positive benefits for these students that may improve their postsecondary outcomes.

The researcher used a 44-question survey to gain insight into how career and technical education teachers feel about the career and technical pathway they teach and its appropriateness for students with MSDs. The survey items were divided into three sections: perceptions, dispositions, and perceived barriers. Survey items in Section 1 used to identify perceptions were based on a Likert-type scale that ranged from 1 to 5 using the following descriptors: (1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree, (5) strongly disagree. Survey items in Section 2 used to identify current dispositions that model current best practice for inclusion instruction were rated on a Likert-type scale that participants responded to with frequency using the following descriptors: (1) daily, (2) weekly, (3) once a month, (4) once a semester, (5) once a year, (6) never. Survey items in Section 3 identified perceived barriers to impact success of students with MSDs within the career and technical education class by teachers responding on the same Likert-type scale using the following descriptors: (1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree, (5) strongly disagree.
Description of the Sample

The demographics of the 109 participating career and technical educators from across the state of Mississippi represented a diverse perspective in years of experience and route to gaining teacher licensure. Teaching experience ranged from first year to more than 25 years. Participants gained their licensure through both traditional and alternate-route methods. This range of experience and teaching background allowed for the opportunity to look at career and technical teachers in a broader view. Most of the career and technical education pathways were represented in the data. The majority of responding career and technical teachers reported teaching in a middle or low socioeconomic community.

Permission was granted to send surveys to 147 career and technical center directors or contact persons. The directors were asked to disperse the survey to their teachers. Approximately 800 teachers received the survey with 109 participating. Of those 109 participating surveys, 89 (82%) teachers completed the entire survey. Descriptive statistics (means and frequency) were used to answer research questions.

Teaching experience. Teaching experience was reported by 100 teachers and ranged from 0 to more than 25 years of teaching experience. The majority of career and technical education teachers were teaching with 16-20 years of experience (n = 24). Teachers with 0-5 years (n = 23) of experience were right behind those with 16 or more years of experience, with only 1% less. Only 7 teachers who responded had taught more than 25 years. Table 4 displays all results of years of teaching experience.
Table 4

_Years of Teaching Experience_

<table>
<thead>
<tr>
<th>Years of Teaching Experience</th>
<th>Frequency</th>
<th>Percent of Responding Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>23</td>
<td>23%</td>
</tr>
<tr>
<td>6-10</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>11-15</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>16-20</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>21-25</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>More than 25</td>
<td>7</td>
<td>7%</td>
</tr>
</tbody>
</table>

_Degree and Certification_

*Highest earned degree.* Highest earned degree was reported by 99 responding teachers. The majority of responding teachers (35.5%) teaching in a career and technical education pathway hold a master’s degree (n = 35). Table 5 displays all results of the highest degree earned among career and technical respondents.

One participant selected _other_ and reported the status of National Board Certified Teacher with a master’s degree. Therefore, because the participant reported she had a master’s degree, the respondent was included as obtaining a _master’s_ degree as the highest earned degree. Table 5 displays the highest earned degree for each of the responding career and technical teachers.
Table 5

*Highest Earned Degree*

<table>
<thead>
<tr>
<th>Highest Earned Degree</th>
<th>Frequency</th>
<th>Percent of Responding Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate</td>
<td>17</td>
<td>17.2</td>
</tr>
<tr>
<td>Bachelor</td>
<td>30</td>
<td>30.3</td>
</tr>
<tr>
<td>Master</td>
<td>36*</td>
<td>36.4*</td>
</tr>
<tr>
<td>Specialist</td>
<td>11</td>
<td>11.1</td>
</tr>
<tr>
<td>Doctoral</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: One participant originally selected other and commented having a master’s degree and was national-board certified. Data were adjusted to correctly reflect participants’ highest earned degree based on the provided comment.

*Route to teaching certification.* A total of 100 teachers reported the route they took to receiving a teaching certificate. Licensure was obtained by 68% of responding teachers through the alternate-route program. A total of 11 participants originally selected other as their route to certification. They reported obtaining their teaching certification through the VIP program offered at the Research and Curriculum Unit at Mississippi State University. This VIP program is considered the alternate-route pathway to obtaining career and technical education licensure in the state of Mississippi. Therefore, those participants' responses were included with the alternate route results. Table 6 displays the route to teaching certification reported by each of the responding career and technical education teachers.
Table 6

*Route to Teaching Certification*

<table>
<thead>
<tr>
<th>Route</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>32</td>
<td>32%</td>
</tr>
<tr>
<td>Alternate</td>
<td>68</td>
<td>68%*</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Note: Eleven participants originally selected *other* and commented having completed the VIP program (Mississippi’s pathway to obtaining an alternate-route teaching certification for career and technical educators). Data were adjusted to correctly reflect participants’ route to obtaining licensure based on provided comment.

*Classroom environment.* Over 30% of 98 responding career and technical teachers were currently teaching in either education, child development, family services or health science and medical technology pathways. Table 7 displays all participating teachers’ pathways in which they were teaching at the time of this survey.

A total of 24 participants selected *other* in response to the career pathway in which they teach. One participant reported digital media, which fell in the Arts, Media and Entertainment cluster. Two participants reported culinary arts, which fell in the Hospitality and Tourism cluster. Three participants reported law and public safety, which fell in the Public Service cluster. Two participants reported automotive collision and repair, which fell within the Transportation and Logistics cluster.
### Table 7

**Career and Technical Pathways**

<table>
<thead>
<tr>
<th>CTE Pathway</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources</td>
<td>8</td>
<td>8.16%</td>
</tr>
<tr>
<td>Arts, Media and Entertainment</td>
<td>5</td>
<td>5.1%</td>
</tr>
<tr>
<td>Building and Construction</td>
<td>9</td>
<td>9.2%</td>
</tr>
<tr>
<td>Business and Finance</td>
<td>9</td>
<td>9.2%</td>
</tr>
<tr>
<td>Education, Child Development, and Family Services</td>
<td>16</td>
<td>16.3%</td>
</tr>
<tr>
<td>Energy, Environment, and Utilities</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Engineering and Architecture</td>
<td>10</td>
<td>10.2%</td>
</tr>
<tr>
<td>Fashion and Interior Design</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Health Science and Medical Technology</td>
<td>15</td>
<td>15.3%</td>
</tr>
<tr>
<td>Hospitality and Tourism</td>
<td>4</td>
<td>4.1%</td>
</tr>
<tr>
<td>Information and Communication Technologies</td>
<td>3</td>
<td>3.1%</td>
</tr>
<tr>
<td>Manufacturing and Product Development</td>
<td>5</td>
<td>5.1%</td>
</tr>
<tr>
<td>Marketing and Product Development</td>
<td>3</td>
<td>3.06%</td>
</tr>
<tr>
<td>Marketing Sales and Service</td>
<td>2</td>
<td>2.04%</td>
</tr>
<tr>
<td>Public Service</td>
<td>5</td>
<td>5.1%</td>
</tr>
<tr>
<td>Transportation</td>
<td>8</td>
<td>8.2%</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
<td>16.3%</td>
</tr>
</tbody>
</table>

Note: 24 participants originally selected *other* and responded in the comments to a vocation that fit into one of the listed career pathways. Data were adjusted to correctly reflect participants’ career pathways.
Class size was reported by 99 teachers. A majority of career and technical education teachers have a class size of 20 or more students per class with 83.8% reporting. Table 8 denotes the total number of students per class reported by participating teachers.

Table 8

Class Size

<table>
<thead>
<tr>
<th>Number of Students</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>3</td>
<td>3.0%</td>
</tr>
<tr>
<td>10-20</td>
<td>13</td>
<td>13.1%</td>
</tr>
<tr>
<td>More than 20</td>
<td>83</td>
<td>83.8%</td>
</tr>
</tbody>
</table>

The number of students who meet the criteria for having a MSD was reported by 100 teachers. Approximately half of career and technical educators, 42%, report they do not teach any students who meet the criteria for having a MSD. Table 9 indicates the number of students who are enrolled in career technical education who have a MSD reported by participating career and technical educators. Two participants selected other as their response and then commented they currently teach more than five students who meet the criteria for MSDs. Therefore, those two participants were moved into the more than 5 selection option.
Table 9

*Students with Moderate to Severe Disabilities*

<table>
<thead>
<tr>
<th>Number of Students Who Meet the MSD Criteria</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>42</td>
<td>42%</td>
</tr>
<tr>
<td>1-3</td>
<td>31</td>
<td>31%</td>
</tr>
<tr>
<td>3-5</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>More than 5</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Note: Two participants originally selected *other* and commented having more than five students with MSDs. Data were adjusted to correctly reflect total number of students with MSDs.

*Eligibility categories.* Eligibility categories were reported by 91 teachers. Students with specific learning disabilities make up the majority (50.5%) of students served in the respondents’ classrooms, followed by students with intellectual disabilities (46.1%). Table 10 reports the results from participating career and technical educators.

A total of 12 participants originally selected *other* as the eligibility category. One participant indicated that the student had Asperger Syndrome, which is included in the *Autism* category. Two participants indicated the students had attention deficit hyperactive disorder (ADHD), which is included in the *other health impairment* category. One participant indicated a student had cerebral palsy, which is included in the *physical impairment* category. The remaining eight participants who selected *other* indicated disability was unknown. Unknown data were left as reported because comments did not indicate an appropriate category of eligibility.
Table 10

*Eligibility Category*

<table>
<thead>
<tr>
<th>Eligibility Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
<td>26</td>
<td>28.6%</td>
</tr>
<tr>
<td>Deaf-Blindness</td>
<td>2</td>
<td>2.2%</td>
</tr>
<tr>
<td>Deafness</td>
<td>3</td>
<td>3.3%</td>
</tr>
<tr>
<td>Emotional Disturbance</td>
<td>33</td>
<td>36.3%</td>
</tr>
<tr>
<td>Hearing Impairment</td>
<td>8</td>
<td>8.8%</td>
</tr>
<tr>
<td>Intellectual Disability</td>
<td>42</td>
<td>46.1%</td>
</tr>
<tr>
<td>Multiple Disabilities</td>
<td>14</td>
<td>15.4%</td>
</tr>
<tr>
<td>Orthopedic Impairment</td>
<td>8</td>
<td>8.8%</td>
</tr>
<tr>
<td>Other Health Impairment</td>
<td>16</td>
<td>17.6%</td>
</tr>
<tr>
<td>Specific Learning Disability</td>
<td>46</td>
<td>50.6%</td>
</tr>
<tr>
<td>Speech and Language Impairment</td>
<td>24</td>
<td>26.27%</td>
</tr>
<tr>
<td>Traumatic Brain Injury</td>
<td>2</td>
<td>2.2%</td>
</tr>
<tr>
<td>Visual Impairment</td>
<td>4</td>
<td>4.4%</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>8.8%</td>
</tr>
</tbody>
</table>

*Socioeconomic status.* Career and technical education teachers were asked to describe the overall socioeconomic status for the school in which they were currently teaching. The response rate of teachers totaled 99. Of those responses, 53.5% of career and technical educators indicated they taught in a school with a low socioeconomic status. Table 11 reports the results indicated by participating teachers. One participant selected *other* and reported the school socioeconomic status between middle and low.
Table 11

Socioeconomic Status

<table>
<thead>
<tr>
<th>Socioeconomic Status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>5</td>
<td>5.0%</td>
</tr>
<tr>
<td>Middle</td>
<td>40</td>
<td>40.4%</td>
</tr>
<tr>
<td>Low</td>
<td>53</td>
<td>53.54%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Quantitative Data Analysis

Three research questions guided this study to understand how career and technical teachers saw their current classroom environment for students with MSDs as an appropriate place for instruction by examining their perspective, dispositions, and perceived barriers. A web-based survey was used to collect data to answer the research questions. Using the data collected through the web-based survey, the researcher analyzed and reported the following descriptive statistics: frequency, percentage, mean, and standard deviation in tables and graphs to show commonalities and a general perspective of career and technical teachers and how they saw the inclusion of students with MSDs based on their perceptions, dispositions, and perceived barriers.

Personal Perceptions

Research Question 1: What are the personal perceptions of Mississippi career and technical education teachers in the state of Mississippi toward inclusion of students with MSDs into career and technical education pathways? To answer this question, Mississippi career and technical education teachers were asked to report their perceptions on the appropriateness of
their current career and technical classroom and their thoughts to better include students with
MSDs in the career pathway in which they currently taught to answer Research Question 1.

The data showed a willingness to include and provide instruction to students with MSDs
is evident among the responses of Mississippi career and technical teachers. Over half (51.1%) of
participating career and technical education teachers surveyed believe that students should
participate in career and technical education pathways. Although 74.1% of career and technical
educators acknowledged students with MSDs struggle completing course requirements, 72.6% at
least agree, with 20.9% of those strongly agreeing, that students with MSDs are capable of
learning vocational skills to prepare them for competitive employment. A positive finding in the
data indicated that approximately 65% of participating teachers agree, with 13.2% strongly
agreeing, that the career and technical education instruction is beneficial for students with MSDs.
Figure 2 depicts the overall positive perspectives that Mississippi career and technical education
teachers have toward providing transition instruction for students with MSDs.
Resource development includes both instructional materials and professional development to aid in an effective transitional program structure. Professional development has been identified as a primary component when implementing evidence-based practices into transition instruction (Benitez et al., 2009; Mazzotti & Plotner, 2016). Participating teachers were asked about how they perceived access to resources with 34.7% of participating career and technical teachers strongly agreeing and 13.7% agreeing they have the resources and support to teach students with MSDs in their current classrooms. Over 48% of these teachers feel they have what they need to teach students with MSDs in their career and technical education classroom. Figure 3 depicts the responses of participating teachers as they reported their perspective of resource needs, including professional development.
Teachers need support. A collaborative framework includes providing support, not only through professional development, but also through a system of communication that shares progress, concerns, and needs for review and revision (Wehman, 2013). In Mississippi, career and technical education teachers report a positive finding for that system of communication with both special education teachers and administration. Fifty percent of participating teachers agree and 15.8% strongly agree they have the support needed from administration. Also, 39.4% agree and 10.6% strongly agree they have the support needed from special education teachers to aid in implementing instruction. Figures 4 and 5 depict how Mississippi career and technical teachers see access to a supportive communication system.

Figure 3. Perception of needed resources.
Collaboration among the educational team is a direct link to effective instruction (Martin et al., 2002). In Mississippi, there is an understanding of this necessity with 74% of participating career and technical educators agreeing or strongly agreeing that collaboration between special
education and general education teachers impacts the success of students with MSDs in the pathway in which they are currently teaching; 5.3% of teachers disagree or strongly disagree.

Although the majority has a positive perspective, a negative perspective does exist. Overall, 16.2% of reporting teachers agree or strongly agree that students with MSDs should not participate in career and technical education pathways. Approximately 5% of career and technical education teachers disagree that career and technical education instruction would be beneficial for students who have MSDs. Figure 6 indicates the overall disagreement toward the inquired benefits of students with MSDs participating in career and technical education pathways.

![Figure 6. Negative perceptions toward career and technical education inclusion.](image)

Available resources are a concern for 26.3% of participating teachers as they feel they are lacking the resources they need to teach (see Figure 3). Support was another area that showed a
concern with 23.6% of career and technical educators indicating they do not have the needed support from administration (see Figure 4), and 24.4% feel they do not have the needed support from special education teachers to teach students with MSDs (see Figure 5).

A safe learning environment was reported as a concern for responding teachers. Although 25.2% of participating teachers reported a concern about their classroom being unsafe for students with MSDs, 45.7% of participants disagree or strongly disagree that their classroom is unsafe. Tables 12 and 13 report the descriptive statistics based on the response results for statements about teachers’ personal perceptions of including students with MSDs in their current teaching classroom.
Table 12

Personal Perceptions

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Number of Responses (n)</th>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe I have the resources, including professional development, I need to teach students with moderate to severe disabilities in this CTE course.</td>
<td>95</td>
<td>13.7</td>
<td>34.7</td>
<td>25.3</td>
<td>15.8</td>
<td>10.5</td>
</tr>
<tr>
<td>I believe I have support from administration to help teach students with moderate to severe disabilities.</td>
<td>95</td>
<td>15.8</td>
<td>50.5</td>
<td>20.0</td>
<td>20.5</td>
<td>3.1</td>
</tr>
<tr>
<td>I believe I have support from special education teachers to help teach students with moderate to severe disabilities.</td>
<td>94</td>
<td>10.6</td>
<td>39.4</td>
<td>25.5</td>
<td>19.1</td>
<td>5.3</td>
</tr>
<tr>
<td>I believe it is unsafe for students with moderate to severe disabilities to participate in the CTE program.</td>
<td>83</td>
<td>9.6</td>
<td>15.6</td>
<td>28.9</td>
<td>30.1</td>
<td>15.6</td>
</tr>
<tr>
<td>Survey Item</td>
<td>Number of Responses (n)</td>
<td>Strongly Agree (1)</td>
<td>Agree (2)</td>
<td>Neither Agree nor Disagree (3)</td>
<td>Disagree (4)</td>
<td>Strongly Disagree (5)</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>--------------------</td>
<td>-----------</td>
<td>-----------------------------</td>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>I believe students with moderate to severe disabilities are capable of learning vocational skills to prepare them for competitive employment.</td>
<td>91</td>
<td>20.9</td>
<td>51.7</td>
<td>19.8</td>
<td>6.6</td>
<td>1.1</td>
</tr>
<tr>
<td>I believe students with moderate to severe disabilities should not participate in this CTE program.</td>
<td>86</td>
<td>8.1</td>
<td>8.1</td>
<td>32.6</td>
<td>34.8</td>
<td>16.3</td>
</tr>
<tr>
<td>I believe students with moderate to severe disabilities have a significantly more difficult time completing course requirements.</td>
<td>93</td>
<td>26.8</td>
<td>47.3</td>
<td>19.3</td>
<td>5.4</td>
<td>1.1</td>
</tr>
<tr>
<td>I believe CTE instruction is beneficial to students with moderate to severe disabilities.</td>
<td>91</td>
<td>13.2</td>
<td>51.7</td>
<td>29.7</td>
<td>3.3</td>
<td>2.2</td>
</tr>
<tr>
<td>I believe CTE programs help students with moderate to severe disabilities set realistic career goals.</td>
<td>89</td>
<td>21.4</td>
<td>50.1</td>
<td>23.6</td>
<td>4.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Table 12 (continued)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Number of Responses (n)</th>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Disagree (4)</th>
<th>Strongly Disagree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe students with moderate to severe disabilities receive similar benefits from CTE programs as typical peers.</td>
<td>92</td>
<td>9.8</td>
<td>43.5</td>
<td>34.8</td>
<td>8.7</td>
<td>3.3</td>
</tr>
<tr>
<td>I believe CTE programs enhance social skills of students with moderate to severe disabilities.</td>
<td>91</td>
<td>16.5</td>
<td>59.3</td>
<td>21.9</td>
<td>0.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Collaboration between special education and general education teachers impacts success of students with disabilities in the CTE pathway I teach.</td>
<td>94</td>
<td>25.5</td>
<td>48.9</td>
<td>14.9</td>
<td>3.2</td>
<td>2.1</td>
</tr>
</tbody>
</table>
## Table 13

**Personal Perceptions**

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe I have the resources, including professional development, I need to teach students with moderate to severe disabilities in this CTE course.</td>
<td>2.75</td>
<td>1.19</td>
</tr>
<tr>
<td>I believe I have support from administration to help teach students with moderate to severe disabilities.</td>
<td>2.35</td>
<td>.97</td>
</tr>
<tr>
<td>I believe I have support from special education teachers to help teach students with moderate to severe disabilities.</td>
<td>2.69</td>
<td>1.06</td>
</tr>
<tr>
<td>I believe it is unsafe for students with moderate to severe disabilities to participate in the CTE program.</td>
<td>3.27</td>
<td>1.18</td>
</tr>
<tr>
<td>I believe students with moderate to severe disabilities are capable of learning vocational skills to prepare them for competitive employment.</td>
<td>2.15</td>
<td>.86</td>
</tr>
<tr>
<td>I believe CTE instruction is beneficial to students with moderate to severe disabilities.</td>
<td>2.30</td>
<td>.82</td>
</tr>
<tr>
<td>I believe students with moderate to severe disabilities receive similar benefits from CTE programs as typical peers.</td>
<td>2.52</td>
<td>.90</td>
</tr>
<tr>
<td>Collaboration between special education and general education teachers impacts success of students with disabilities in the CTE pathway I teach.</td>
<td>2.23</td>
<td>1.23</td>
</tr>
</tbody>
</table>
Dispositions

Research Question 2: What are the dispositions of Mississippi career and technical education teachers in the state of Mississippi toward inclusion of students with moderate to severe disabilities into career and technical education pathways? Research Question 2 was answered by the following survey items, which captured current practices, resources, and instructional strategies that career and technical educators are using in their classes.

**Collaboration.** Collaboration between members of the multidisciplinary team has been described as an effective best practice for improving postsecondary outcomes (MacDonnell & Hunt, 2014), and it is a requirement (IDEA, 2004). Figure 7 depicts the frequency of collaboration reported by career and technical educators that is currently taking place in their individual classroom.
Approximately 40% of career and technical educators are currently collaborating on a weekly basis for instructional support, and 5.5% of participating teachers reported never collaborating with another teacher for academic support. Additionally, 67.4% of career and
technical education teachers receive feedback from administration at least once a month, with 22.5% of those teachers reporting receiving feedback once a week from administration. Seven percent of teachers reported never receiving feedback from administration while 5.6% of career and technical educators report requesting support on a daily basis, with 30.6% requesting support weekly, 23.6% requesting support monthly, 16.7% requesting support once per semester, and 4.2% requesting support only once per year. Approximately 20% reported never requesting support for students receiving special education services.

Collaboration in individualized education plan meetings was reported to be once per semester for 24.4% of participants and once per year for 25.6% of participants. However, 36.6% of participating teachers indicated never collaborating in IEP meetings for students receiving special education services. Seventy-five percent of responding participants reported never participating in writing transition goals for students receiving special education services.

Participants were asked if they provided feedback for the IEP committee concerning goals for the students receiving special education services. Approximately 35% of responding teachers indicated they never provide feedback for goal planning, and only 21.8% provide feedback once a year.

**Professional development.** A primary component of effective transition planning and evidence-based instruction is professional development (Benitez et al., 2009; Mazzotti & Plotner, 2016). Career and technical education teachers reported the frequency of professional development that focused on either behavior management or instruction/academic support for students receiving special education services. Figure 8 depicts how often teachers participate in professional development for behavior or classroom instruction for students who are receiving special education services.
Of teacher respondents, 64.5% said they receive professional development for managing behavior of students receiving special education services once a year, with 14.6% of those receiving professional development once per semester. Results showed 65% of teachers participate in professional development for providing instruction to students receiving special education services at least once per year, with 17.4% of those receiving professional development once per semester.

**Interagency collaboration including community-based instruction.** Transition instruction is not only collaborative across education professionals, it is also collaborative across agencies and disciplines that work together toward positive outcomes (Davies & Beamish, 2009). Career and technical teachers reported how often they utilize the community and local businesses and incorporate them into instruction. Figure 9 shows the frequency of instruction currently taking place within career and technical education classrooms.
The frequency of using community-based instruction was reported to be used by career and technical education teachers an average of once a month with 30.7% using the local community as a method of delivering instruction. Almost 23% of career and technical teachers use the local community to deliver instruction weekly, with 3.4% of them using the local community daily. Only 19.3% of participating teachers utilize the local community for instruction once per semester, with 14.3% using the local community once per year. One third of participating teachers incorporate local business/industry, community services, and/or other professional service providers into their curriculum monthly. Only 13.3% incorporate these partnerships into the curriculum on a weekly basis. Another third use local partnerships within the curriculum at least once per semester.

Networking within the community and using the community as an environment for instruction effectively provides a generalizable method for students with MSDs (Agrin et al., 

![Figure 9. Frequency of interagency collaboration and community based instruction.](image-url)
2002; Davies and Beamish, 2009). Table 14 reports the frequency of use of evidence-based practices identified for transitional instruction that are currently implemented within Mississippi career and technical classrooms. Table 15 reports the mean and standard deviation of responses.

Table 14

*Percentage of Responses for Frequency of Disposition*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Total Number of Responses (n)</th>
<th>Daily (1)</th>
<th>Weekly (2)</th>
<th>Monthly (3)</th>
<th>Once per Semester (4)</th>
<th>Once per Year (5)</th>
<th>Never (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I collaborate with another teacher for academic support.</td>
<td>92</td>
<td>17.6</td>
<td>39.9</td>
<td>23.1</td>
<td>7.7</td>
<td>6.6</td>
<td>5.5</td>
</tr>
<tr>
<td>I incorporate individuals from local business/industry, community services, and/or other professional service providers (Physical therapist, occupational therapist, etc..) into the curriculum</td>
<td>91</td>
<td>1.1</td>
<td>13.3</td>
<td>33.3</td>
<td>30.0</td>
<td>5.6</td>
<td>16.7</td>
</tr>
</tbody>
</table>
Table 14 (continued)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Total Number of Responses (n)</th>
<th>Daily (1)</th>
<th>Weekly (2)</th>
<th>Monthly (3)</th>
<th>Once per Semester (4)</th>
<th>Once per Year (5)</th>
<th>Never (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I teach using the local community (job shadowing, field trips, community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>services, internships, etc..) as the methods of delivering instruction.</td>
<td>89</td>
<td>3.4</td>
<td>22.7</td>
<td>30.7</td>
<td>19.3</td>
<td>14.8</td>
<td>9.1</td>
</tr>
<tr>
<td>I request assistance/support for students receiving special education</td>
<td>72</td>
<td>5.6</td>
<td>30.6</td>
<td>23.6</td>
<td>16.7</td>
<td>4.2</td>
<td>19.4</td>
</tr>
<tr>
<td>services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I participate in professional development for managing behavior of students</td>
<td>83</td>
<td>0.0</td>
<td>1.2</td>
<td>21.9</td>
<td>14.6</td>
<td>26.8</td>
<td>35.6</td>
</tr>
<tr>
<td>receiving special education services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I participate in professional development for providing instruction to</td>
<td>87</td>
<td>0.0</td>
<td>2.3</td>
<td>15.1</td>
<td>17.4</td>
<td>30.2</td>
<td>34.9</td>
</tr>
<tr>
<td>students receiving special education services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey Item</td>
<td>Total Number of Responses (n)</td>
<td>Daily (1)</td>
<td>Weekly (2)</td>
<td>Monthly (3)</td>
<td>Once per Semester (4)</td>
<td>Once per Year (5)</td>
<td>Never (6)</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------</td>
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<td>------------</td>
<td>-------------</td>
<td>----------------------</td>
<td>------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>I receive feedback from administration on classroom instruction and support.</td>
<td>90</td>
<td>5.6</td>
<td>22.5</td>
<td>39.3</td>
<td>20.2</td>
<td>5.6</td>
<td>6.7</td>
</tr>
<tr>
<td>I provide feedback to individualized education plan meeting committee concerning goals for students receiving special education services.</td>
<td>88</td>
<td>2.3</td>
<td>4.6</td>
<td>14.9</td>
<td>21.8</td>
<td>21.8</td>
<td>34.5</td>
</tr>
<tr>
<td>I collaborate in individualized education plan meetings of a student receiving special education students.</td>
<td>83</td>
<td>1.2</td>
<td>4.9</td>
<td>7.3</td>
<td>24.4</td>
<td>25.6</td>
<td>36.6</td>
</tr>
<tr>
<td>I participate in writing transition goals for students receiving special education services.</td>
<td>88</td>
<td>1.2</td>
<td>2.3</td>
<td>2.3</td>
<td>3.5</td>
<td>16.1</td>
<td>74.7</td>
</tr>
</tbody>
</table>
Table 15

Dispositions

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I collaborate with another teacher for academic support.</td>
<td>2.62</td>
<td>1.33</td>
</tr>
<tr>
<td>I incorporate individuals from local business/industry, community services, and/or other professional service providers (Physical therapist, occupational therapist, etc.) into the curriculum</td>
<td>3.78</td>
<td>1.29</td>
</tr>
<tr>
<td>I teach using the local community (job shadowing, field trips, community services, internships, etc..) as the methods of delivering instruction.</td>
<td>3.45</td>
<td>1.32</td>
</tr>
<tr>
<td>I request assistance/support for students receiving special education services.</td>
<td>3.42</td>
<td>1.56</td>
</tr>
<tr>
<td>I participate in professional development for managing behavior of students receiving special education services</td>
<td>4.75</td>
<td>1.19</td>
</tr>
<tr>
<td>I participate in professional development for providing instruction to students receiving special education services.</td>
<td>4.82</td>
<td>1.14</td>
</tr>
<tr>
<td>I provide feedback to individualized education plan meeting committee concerning goals for students receiving special education services.</td>
<td>4.61</td>
<td>1.34</td>
</tr>
<tr>
<td>I collaborate in individualized education plan meetings of a student receiving special education students.</td>
<td>4.80</td>
<td>1.22</td>
</tr>
<tr>
<td>I participate in writing transition goals for students receiving special education services.</td>
<td>5.56</td>
<td>.98</td>
</tr>
</tbody>
</table>

Perceived Barriers

Research Question 3: What are the barriers toward including students with MSDs in career and technical education programs perceived by Mississippi career and technical education teachers? The act of identifying barriers is a characteristic of effective teaching (Benedict et al.,
Career and technical education teachers were asked to reflect and respond to what they believe impacts the inclusion of students with MSDs. These beliefs were identified through Section 3 of the survey instrument. Figure 10 indicates the results of career and technical educators’ responses of what they feel hinders them from effectively including students with MSDs.

Figure 10. Perceived barriers toward inclusion of students with moderate to severe disabilities.

Results identified safety as the top concern (88.1%) of career and technical education teachers for including students with MSDs into their classrooms.
The collaborative framework including administrative and parental support was identified by Mississippi career and technical education teachers as an area that impacts the success of students with MSDs in the career and technical classrooms. Parental support had the second highest average of agreeing teachers with 80.7% of participants reporting an impact on the inclusion of students with MSDs. Based on responses, 78.2% of teachers agree that administrative support also influences the effectiveness of inclusion of students with MSDs.

Career and technical educators indicate availability of resources as a barrier with 73.9% of respondents reporting they agree or strongly agree. Staffing is perceived to be a barrier for teachers with 73.9% reporting it affects ability to provide instruction, and 59.4% reported that staffing affects ability to schedule appropriately.

Funding to provide instructional resources was identified as a barrier for 71% of career and technical educators, and 58.5% of responding teachers said that available industry and the local job market impacts effective inclusion of students with MSDs into their classroom. Transportation was only identified as a barrier for 23.6% of responding teachers. Table 16 reports frequency of how respondents perceived barriers identified through review of the literature. Table 17 reports the mean and standard deviation of responses.
Table 16

Percent of Responses for Perceived Barriers Impacting Inclusion of Students With Moderate to Severe Disabilities

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Total # of Responses (n)</th>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Disagree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation impacts success of students with disabilities in the CTE I teach.</td>
<td>93</td>
<td>7.5</td>
<td>16.1</td>
<td>36.6</td>
<td>24.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Available industry/job market in geographic impacts success of students with disabilities in the CTE I teach.</td>
<td>91</td>
<td>8.8</td>
<td>49.5</td>
<td>35.6</td>
<td>2.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Parental Support impacts success of students with disabilities in the CTE I teach.</td>
<td>93</td>
<td>36.6</td>
<td>44.1</td>
<td>17.2</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Administrative support impacts success of students with disabilities in the CTE I teach.</td>
<td>92</td>
<td>22.8</td>
<td>55.4</td>
<td>17.4</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Safety of the student impacts success of students with disabilities in the CTE I teach.</td>
<td>92</td>
<td>44.6</td>
<td>43.5</td>
<td>7.6</td>
<td>4.4</td>
<td>0.0</td>
</tr>
</tbody>
</table>
### Table 16 (continued)

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Total # of Responses (n)</th>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Disagree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing for providing instruction impacts success of students with disabilities in the CTE I teach.</td>
<td>92</td>
<td>26.1</td>
<td>47.8</td>
<td>21.7</td>
<td>3.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Access to appropriate resources, including professional development, impacts success of students with disabilities in the CTE I teach.</td>
<td>92</td>
<td>22.8</td>
<td>51.1</td>
<td>18.5</td>
<td>5.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Staffing for scheduling impacts success of students with disabilities in the CTE I teach.</td>
<td>91</td>
<td>16.5</td>
<td>42.9</td>
<td>30.8</td>
<td>6.6</td>
<td>3.3</td>
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<tr>
<td>Funding to provide instructional resources impacts success of students with disabilities in the CTE I teach.</td>
<td>93</td>
<td>23.7</td>
<td>47.3</td>
<td>18.3</td>
<td>9.7</td>
<td>1.1</td>
</tr>
</tbody>
</table>

### Table 17

**Mean and Standard Deviation for Frequency of Disposition**

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation impacts success of students with disabilities in the CTE I teach.</td>
<td>3.26</td>
<td>1.16</td>
</tr>
<tr>
<td>Available industry/job market in geographic impacts success of students with disabilities in the CTE I teach.</td>
<td>2.44</td>
<td>.85</td>
</tr>
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</table>
Table 17 (continued)

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<tbody>
<tr>
<td>Parental Support impacts success of students with disabilities in the CTE I teach.</td>
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<td>.81</td>
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<td>Administrative support impacts success of students with disabilities in the CTE I teach.</td>
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<td>.83</td>
</tr>
<tr>
<td>Access to appropriate resources, including professional development, impacts success of students with disabilities in the CTE I teach.</td>
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<td>.90</td>
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<tr>
<td>Staffing for scheduling impacts success of students with disabilities in the CTE I teach.</td>
<td>2.37</td>
<td>.95</td>
</tr>
<tr>
<td>Funding to provide instructional resources impacts success of students with disabilities in the CTE I teach.</td>
<td>2.17</td>
<td>.93</td>
</tr>
</tbody>
</table>

**Analysis of Reflective Comments**

Better understanding was gained through open-ended questions to answer the same three research questions. Questions about additional perceived barriers, needed professional development and resources, and additional comments were included to increase the understanding of responses from survey items. In addition to an open-ended question, survey items included a comment box to capture any additional comment or concern from respondents. Those comments and concerns were included in the qualitative data analysis.

**Personal Perceptions**

Career and technical educators were asked to comment on the appropriateness of their current classroom for serving students with MSDs. “CTE is the best way to show special needs students what a real-world work environment will be like,” “in culinary arts we can serve this population that is not being served,” and “I have watched them grow in confidence and they were able to apply the competencies and skills learned in this class” were among the comments provided by teachers who feel that career and technical education could be a possible place for
appropriate transition instruction. Five respondents identified the need for determining appropriateness based on the individual need of the student. Three participating teachers indicated the need for addressing realistic goals and career choices in their responses. One response indicated a need to better inform parents and students of career and technical education expectations. Better information leads to more realistic goals for every student.

Some career and technical educators responded that “students with severe disabilities, in my opinion, do not have a place in most CTE classes” and “would not benefit” from career and technical pathways. Responses indicated a belief that specific course content hinders success; for example, one respondent indicated some content that is “chemistry-based” may not be appropriate or the class may be too “fast-paced” for students with MSDs. Figure 11 shows the overall perceptions of how career and technical educators feel their current classroom is as an appropriate learning environment for teaching transitional skills to students with MSDs.

![Figure 11](image-url)

*Figure 11.* Frequency of perceptions of appropriateness of the current career and technical education classroom.
Needs of Career and Technical Teachers to Increase Appropriateness

Career and technical educators were asked to provide needed professional development and resources they felt would enhance the instruction and better help them provide support for students with MSDs in their classrooms through an open-ended question. Sixty participating teachers responded to the survey question. Two participating teachers indicated “any” professional development would help; one indicated “a lot” was needed; and one said “quarterly” professional development would help. Eight respondents indicated there was no need for more professional development to aid in instruction for students with MSDs.

Six respondents asked for professional development for “inclusion strategies” to get students involved. Three respondents indicated a need to “help instruct students with severe reading difficulties.” One participating teacher indicated that “classroom management” would benefit classroom instruction. Resources requested through responses were safety equipment, money for supplies, and a teaching assistant. One response indicated a need for community resources to provide more opportunities for “part time work programs.” Figure 12 shows the range of comments concerning professional development and resource needs to increase appropriateness of the career and technical education classroom as a least restrictive environment for students with MSDs.
Figure 12. Frequency of needs to increase appropriateness.

Perceived Barriers Impacting Success in Career and Technical Education Classrooms

An open-ended prompt was provided to elicit more information as to barriers that career and technical education teachers see as impacting the instruction of students with MSDs in their classroom. Comments were coded into themes that revealed additional barriers that are felt among Mississippi career and technical educators. Sixty-eight participants responded to this survey item. Student ability was mentioned most frequently with 12 of the 72 comments suggesting students do not have the level of academic knowledge, cognitive ability, or social skills to keep up with the demands of the pathway. Time was the second most frequently suggested barrier, being mentioned eight times. “Having the time to specifically spend on individual” instruction and having to “move so fast just to cover material” were concerns among career and technical education teachers. Three other responses indicated resources as a barrier.
Motivation and expectations appeared three times throughout the responses. Responses such as “they don’t have the confidence that they can be successful in this class” and “they don’t know how to do much for themselves” both highlight what career and technical teachers are seeing as barriers for students with MDSs becoming successful in career and technical education programs. One response indicated that “class size” was problematic. Staffing and instructional support were mentioned four times as barriers to effective instruction. Safety of students was mentioned two times. Parental support was seen as impacting classroom instruction by four respondents. Testing was mentioned twice as a barrier to providing effective instruction. One teacher responded that attitudes of other students interfered with students with MSDs being successful in their classroom. Behavior was identified by one participant as impacting effective instruction. One participating teacher identified “not knowing how to teach them” as a barrier to effective instruction for teaching students with MSDs in the career and technical education pathway. Figure 13 displays the frequency barriers mentioned in the open-ended portion of the survey.
Career and technical educators reported what they felt impacted the success of students with MSDs successfully participating in their current classrooms. The information provided by the career and technical education teachers provides a starting point for closing the gap to better meet the needs of individual students. Meeting the needs of these students increases accessibility to the career and technical programs as a least restrictive environment.

**Figure 13.** Frequency of barriers mentioned in open-ended responses.
CHAPTER V
CONCLUSION

This study was designed to gain understanding of the personal perceptions, dispositions, and perceived barriers of Mississippi career and technical education teachers. The results of the analyzed data show that overall Mississippi career and technical education teachers have a positive attitude toward teaching students with MSDs in the career and technical pathways. However, several concerns and reservations were identified by respondents that would help make the career and technical classroom a more appropriate place for inclusion transition instruction.

An Overview of the Study

The review of the literature identified a “significant social problem” of declining rates of employment among individuals with MSDs and negative postsecondary outcomes for students with disabilities (Certo et. al, 2008, p. 87). The career and technical education classroom was identified as an appropriate environment for implementing transition instruction (Casale-Giannola, 2012; Dieterich & Smith, 2015; Wehman et al., 2016). However, there are low numbers of students with MSDs in the career and technical pathways, and teachers have identified concerns with preparedness, resources, and collaboration as impacting student success in these classrooms (Casale-Giannola, 2012; Gripentrog, 2015). Research has shown that personal perceptions and attitudes (Jones et al., 2008; Niemeyer & Proctor, 2002; Proctor & Niemeyer, 2001; Triandis, 1971; and Wilson, 2014), the dispositions of teachers (Benedict et al.,
2014; Helm, 2007; Jones et al., 2008; Wilson, 2014), and perceived barriers (Benedict et al., 2014; Proctor & Niemeyer, 2001; Watts, 1985) as impacting factors toward effective teaching. Walker and colleagues (2010) suggested further research into career and technical education.

Career and technical education teachers across the state of Mississippi were invited to participate in this study. The career and technical education setting was chosen based on many of the components of the career and technical classroom aligning with many of the evidence-based practices that have been identified through research. The resources, community involvement, and skills that are taught within the career and technical education classroom in Mississippi indicate this is an option for an appropriate environment for transitional instruction for students with MSDs.

Approval was granted to send a web-based survey to 147 career and technical education directors or contact persons to then send to the teachers in their perspective programs. A 4-week window was open for teachers to respond to the survey. A reminder email was sent each week to prompt teachers to respond that had not already. After the 4-week window, 109 career and technical educators responded to the survey.

The survey instrument contained 44 questions, 41 Likert-scale-based questions and three open-ended questions. Each question was written to determine how Mississippi career and technical teachers feel toward the appropriateness of including students with MSDs into their classrooms, the current dispositions and classroom structures that align with current transition instruction best practice, and the perceived barriers that impact inclusion of students with MSDs into the career and technical classrooms.
Discussion of the Findings

After data analysis, the results indicate a positive trend in perception among Mississippi career and technical educators. Positive attitudes are a predictor of effective teaching (Proctor & Niemeyer, 2001) and a crucial linkage to giving students the opportunities to have full citizenship within their local communities (Callahan et al., 2014). According to the collected survey data, Mississippi career and technical teachers have a positive perspective toward teaching students with MSDs and feel they would benefit from career and technical education programs. Overall, the attitude toward students with MSDs in the classrooms of the teachers who participated in this study is positive and shows that the potential for effective teaching is present (Niemeyer & Proctor, 2002). This positive attitude creates a positive learning environment for students and impacts student achievement (Ratliff et al., 2017). The positive attitude among Mississippi career and technical educators toward inclusion of students with MSDs in career and technical education classrooms provides opportunities for improvement in transition instruction.

Career and Technical Education Teachers Feel Their Classroom is Beneficial

The attitude that students with MSDs can be successful is present across the state of Mississippi with 72.6% of participating teachers agreeing that the students are capable of learning vocational skills to prepare them for competitive employment and 64.9% of teachers agreeing that students will benefit from these programs. Of respondents, 75.3% said that the career and technical classroom could enhance social skills for students with moderate to severe disabilities. The understanding that students with MSDs struggle academically is recognized by 74.1% of teachers.

Career and technical teachers identifying that their classroom is beneficial for students with MSDs is a positive finding for Mississippi students. The positive finding that the data show is a starting point for improvement. Understanding how teachers feel provides the background
for understanding what needs to be done to improve. The willingness and belief that the career and technical education classroom could be an appropriate place to teach transitional skills to students with MSDs provides the teacher buy-in to learn and change to better accommodate all students.

**Evidence-Based Practices Exist in the Career and Technical Education Classroom**

The push toward evidence-based practices for transition instruction is increasing as research develops. Providing students with quality transition instruction to be successful beyond high school is a goal for the state of Mississippi (Mississippi Department of Education, 2018a). After reviewing the data provided by Mississippi career and technical educators, evidence-based practices that have been identified in the literature are already being implemented within the career and technical education classroom.

*Community-based instruction/interagency collaboration.* Mississippi students who participate in career and technical pathways are also exposed to community-based instruction at least once a semester in approximately 75% of classrooms. This experience would provide Mississippi students with MSDs the ability to generalize skills they learn in the classroom to a more realistic environment (National Technical Assistance Center on Transition, 2018).

The career and technical education classroom not only provides an already established environment for best practice in generalizing skills beyond the classroom, but over half of career and technical education teachers are delivering their instruction within the community at least once a month. This is an established method of instruction that would be beneficial to those students who have MSDs to increase generalization of social, vocational, and academic skills.

The community-based instruction also provides a network for participating students to have resources and build relationships prior to entering the workforce. The earlier relationships
established through the network of community and industry provides a clearer image of the preferences, interests, and strengths of the individual students.

**A collaborative framework.** Collaboration among faculty, administration, and parents is present. Half of responding teachers felt they needed more support from special education teachers, and 74.4% of teachers understand the importance of collaboration between the multidisciplinary team.

Positive dispositions are linked to reaching students (Helm, 2007). The collaboration among professionals (Davies and Beamish, 2009; Hoover, 2016; Kerna, 2012; Test et al., 2006), professional development (Lampert, 2010; Wehby & Kern, 2014), and using community-based instruction (Dubberly, 2012; Kim & Dymond, 2010; National Technical Assistance Center on Transition, 2018) are behaviors that have been identified as impacting effective instruction.

Collaboration among special education teachers is occurring at least on a weekly basis in over 50% of career and technical classrooms. Collaboration is also occurring outside of the classroom and in the community as linkages are being established with local business and professional service providers at least once a semester in approximately 77% of classrooms. The collaboration that is taking place would provide students with MSDs a network of support to increase independence in the local community and meet transitional goals (Noonan et al., 2008).

An existent collaborative framework among administration, general education, special education, families, community, and industry provides a means of support for students with MSDs. The network is strengthened by the collaboration among those planning and implementing transition instruction.
**Resource Availability**

In the Kohler and Illinois University (2016) transition taxonomy, access to resources was included as a component in the transition program structure. Having the resources to teach students with MSDs includes multiple components: evidence-based practices for instruction, administrative support, collaboration between general education and special education teachers, and professional development (Kohler, 2016). Almost half (48.4%) of teachers feel they have the resources they need to teach students with MSDs, and 66.3% of teachers feel they have support from administration.

Access to the needed resources allows the teachers to feel prepared for instruction and circumstances that may arise during the learning process. Half of the teachers have the feeling they lack preparation. Therefore, the other half feel as if they do not have what they need to effectively teach students with MSDs. Having access to the resources and using the resources for instruction is strengthened by professional development.

*Professional development.* Professional development is a resource that not only has been identified as needed but also as creating a barrier for effective instruction. Approximately 64% of career and technical educators are receiving professional development in managing behaviors of and providing instruction to students receiving special education services, yet approximately 35% of teachers indicate never receiving any professional development to improve instruction and behavior management of students receiving special education services.

The availability of professional development that is specific to the needs of students with MSDs is an area that needs improvement for career and technical educators. Career and technical education teachers in Mississippi need current and new information for both behavior management and instructional support to create an effective learning environment and differentiate the evidence-based practices they already use for students with MSDs.
Reservations of Career and Technical Educators

Barriers that impact student success in the career and technical classroom have been identified through the professional literature. Lack of preparedness, (Avramidis, Bayliss, & Burden, 2000; Fuchs, 2010), collaboration (Test et al., 2006), participating in IEP development (Schmalzried & Harvey, 2014), and student ability (Johnson et al., 2012) are barriers that are also seen among Mississippi career and technical teachers. Participating teachers showed concern for appropriateness due to safety within the classroom environment. Comments that linked to suggestions of improving safety concerns were staffing and providing additional supervision within the classrooms that students with MSDs are served.

Approximately, 16% of career and technical education teachers reported they felt the career and technical classroom was not appropriate for students with MSDs. One factor for this belief was safety, a concern among Mississippi career and technical teachers, with 45.7% of teachers feeling their current classroom is unsafe for students with disabilities. Addressing safety through professional development to increase the understanding of expectations for students with MSDs could improve the perception of the career and technical education classroom being a more appropriate learning environment.

Student ability was addressed in multiple areas of the survey as teachers commented that the response was dependent on the ability of the student. This contingent factor links to a need for strategic and student-focused planning with the Kohler and Illinois University (2016) transition program model. Responding teachers feel that the level of content that is being taught within the career and technical program is a factor of success for students with MSDs.

Career and technical education teachers understanding the strengths and weaknesses of students with MSDs and the expectations for the individual students through the goals set by the collaborative teams would increase the positive attitude among career and technical educators.
Participation in Individualized Education Programs

The number of career and technical education teachers who reported they do not or very rarely participate in IEP meetings or goal development creates a gap in effective instructional design. Participation as a crucial part of the multidisciplinary team provides a solid plan for progressing students with MSDs toward their transitional goals. However, over 30% of career and technical education teachers reported they never participate in IEP meetings or provide feedback toward goal development for students served through special education services in their classrooms.

A gap in collaboration here creates a barrier that impacts the success of students with MSDs in the career and technical education classroom. The career and technical educator has the scaffolded skills needed to progress students toward their goals, and the special educator has the realistic idea of pace and appropriateness of the individual students. Working together, an effective transition plan with positive outcomes would increase.

A Lack of Concern

The data indicated a large number of career and technical teachers who responded with *neither agree or disagree*. This finding is concerning due to the indication of a lack of concern that teachers have for reflecting and improving on the number of students they can reach through their beneficial programs. Figure 14 depicts the frequency of teachers neither agreeing nor disagreeing with items that addressed perceptions or barriers for including students with MSDs.
Figure 14. Frequency that participants chose Neither Agree nor Disagree.

The high frequency of responses indicates a lack of concern or a lack of understanding among Mississippi career and technical educators. Teachers should be provided with professional development that increases their knowledge and understanding of behavioral, social, and academic expectations and instructional support for differentiating instruction for various levels of ability among students.

Conclusion

In Mississippi, the career and technical classroom is thought to be appropriate for teaching students with MSDs among the majority of responding teachers. Career and technical teachers are willing to serve students with MSDs; however, concern for safety and the need for resources are the leading barriers to responding career and technical education teachers believing effective instruction can take place.
The components of an effective transition plan are evident as teachers are using community-based instruction and interagency collaboration as embedded teaching strategies that have been identified as evidence-based practices for transition instruction (Gripentrog, 2015; Kim & Dymond, 2010; Kohler & Illinois university, 2016). Mississippi career and technical teachers are incorporating community and local businesses into their programs, giving all students a universal design of generalization into the workforce.

Even though a large portion of responding career and technical teachers felt that resources are available and that their current classrooms are appropriate to include students with moderate to severe disabilities, professional development that focuses on instruction and behavior management for students with disabilities was lacking among teachers. The structure of an individualized transition program must include not only the needed resources to provide instruction but also resource development (Kohler & Illinois University, 2016). Learning how to utilize instruction while maintaining a positive learning environment is essential, even with the material resources available (Cook & Cook, 2011; Mazzotti & Plotner, 2016).

Collaboration among professionals is positive for the majority of teachers, with many teachers expressing they have what they need to teach students with MSDs. Still, a large percentage of teachers feel more resources and additional staff, funding, and materials are needed to provide an appropriate education for students with MSDs. Although over half of responding teachers reported they collaborated with special education teachers and administrators, approximately 30% of those responding teachers also reported they do not participate in IEP meetings or provide feedback during goal development for students receiving special education services. Participation in IEP meetings and development of appropriate, realistic goals is one way to increase the lack of understanding and preparedness that the career
and technical teachers identified as a barrier to inclusion of students with MSDs in their classrooms.

The collaborative framework that Kohler and her colleagues (2016) established as a component of the taxonomy for transition program is essential in making decisions based on least restrictive environments. A large portion of our Mississippi career and technical teacher responses exceeded more than 50 comments that acknowledged each decision about appropriateness of placement into a career and technical classroom needs to be made on an individual basis and based on student ability and student-focused planning (Kohler & Illinois University, 2016). Working as a collaborative team is essential and work toward creating and utilizing those teams to support students with MSDs in the transition process is needed.

**Limitations**

Volunteer participation in this study possibly limited the representation of the entire population of the state of Mississippi. This provided a potential for biased responses. The opportunity for teachers to have chosen to not participate in the study narrowed the findings and not provide a realistic reflection of the perspectives of the career and technical education teachers sought by this study. The average return rate for survey response is 10%. With only approximately 800 career and technical teachers in the state of Mississippi, gaining the surveys needed to have a desired 5% error of margin was a limitation toward generalization of survey results.

An additional limitation of this study is understanding of special education terminology. This may have hindered teachers’ ability to understand the question items and provide an accurate answer that reflects their true perspective. Clear definitions were provided to aid in this
limitation as well as a review by experts in the field of career and technical education to limit biases, unclear, and/or uncommon terminology in the survey items.

**Implications**

Overall, resources are available to provide instructional benefits in the career and technical classrooms in Mississippi schools. However, the analysis of the data indicated a need for more resources and support to increase the safety and appropriateness of the career and technical education classroom for students with MSDs. Providing additional staff for supervision and instruction was a suggestion given by many participating teachers. Professional development is needed for Mississippi career and technical teachers to feel better prepared to instruct students toward meeting transitional goals.

A focus on expectations for students with MSDs in the career and technical education classroom would increase understanding of what to expect for teachers to increase a differentiated learning environment for students with MSDs. Increasing understanding increases motivation. The large percentage of teachers who responded they *neither agree nor disagree* indicates a need for increased motivation and understanding of how students with MSDs can be successful in the career and technical education classroom.

Accountability in participation in IEP meetings and development of transitional goals for students who receive special education services needs to be ensured by administration. Special educators need to ensure the needed professionals are available to meet and work together to create an effective transition plan. A collaborative plan of meetings and working sessions would increase understanding of expectations and create more realistic goals for the individual students to be successful in career and technical education classrooms.
Future Research

Future research in creating a learning environment for students with MSDs in the career and technical classroom should focus on professional development for aiding teachers in planning and implementing instruction for students with moderate to severe disabilities. Isolating individual factors, such as safety, motivation, academic support, and behavior management, would help researchers to find a clearer explanation of how each factor needs to individually improve to create a more effective learning environment. Research that focuses on individual roles in transition planning—administrators, assistant teachers, career and technical education teachers, and special education teachers—and how they work together to develop and implement transition goals would increase positive outcomes for students with MSDs.

Development of a universal design for all students to be successful within the career and technical education classroom is a desired outcome of future research. Professional development and curriculum guidance about access for all students to create a least restrictive environment that is most appropriate for students with MSDs is needed. A focused attention of research needs to remain on postsecondary transition for students with MSDs.
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APPENDIX A

TEACHER SURVEY
Demographics

- How many total years have you been teaching?
- What is your highest degree earned & certification route (traditional, alternate route)
- What is the total number of students you currently teach?
- How many students do you teach that meet the significantly cognitively delayed criteria?
- Check the eligibility categories of students served through IDEA that are enrolled in your CTE course.
- Please indicate which high school occupational CTE program you currently teach.
- How would you describe the overall socio-economic status of your school? (High, Middle, Low)

Personal Perspectives.

- I believe students with MSD receive similar benefits from CTE pathways as typical peers.
- I believe CTE pathways help students with MSD set realistic career goals.
- I believe CTE pathways enhance social skills of students with MSD.
- I believe CTE instruction is beneficial to students with MSD.
- I believe students with MSD have a significantly more difficult time completing course requirements.
- I believe students with MSD should not participate in this CTE program.
- I believe students with MSD are capable of learning vocational skills to prepare them for competitive employment.
- I believe it is not safe for students with MSD to participate in the CTE program.
- I believe I have support from special education teachers to help teach students with MSD.
- I believe I have support from administration to help teach students with MSD.
- I believe I have the resources, including professional development, I need to teach students with MSD in this CTE course.

Dispositions.

- I collaborate with another teacher for academic support.
- I collaborate in IEP meetings of a student receiving special education students.
- I participate in writing transition goals for students receiving special education services.
- I provide feedback to IEP meeting committee concerning goals for students receiving special education services.
- I receive feedback from administration on classroom instruction and support.
- I participate in professional development for providing instruction to students receiving special education services.
- I participate in professional development for managing behavior of students receiving special education services.
- I request assistance/support for students receiving special education services.
- I teach using the local community (job shadowing, field trips, community services, internships, etc..) as the methods of delivering instruction.
- I incorporate individuals from local business/industry, community services, and/or other professional service providers (Physical therapist, occupational therapist, etc..) into the curriculum
Perceived Barriers.

- Collaboration between special education and general education teachers impacts success of students with disabilities in the CTE I teach.
- Funding to provide impacts success of students with disabilities in the CTE I teach.
- Staffing for scheduling impacts success of students with disabilities in the CTE I teach.
- Staffing for providing instruction impacts success of students with disabilities in the CTE I teach.
- Access to appropriate resources, including professional development, impacts success of students with disabilities in the CTE I teach.
- Safety of the student impacts success of students with disabilities in the CTE I teach.
- Administrative support impacts success of students with disabilities in the CTE I teach.
- Parental Support impacts success of students with disabilities in the CTE I teach.
- Available industry/job market in geographic impacts success of students with disabilities in the CTE I teach.
- Transportation impacts success of students with disabilities in the CTE I teach.

Reflective comments

- What other barriers or challenges do you feel negatively impact the delivery of education to students with MSD in your CTE program?
- What other professional development or resources do you feel would enhance the instruction and better provide supports and services for students with MSD in your CTE program?
- Are there additional comments you would like to add concerning the appropriateness of your CTE class being a place to provide instruction to students with moderate to severe disabilities?
APPENDIX B
SURVEY/INTERVIEW VALIDATION RUBRIC
<table>
<thead>
<tr>
<th><strong>Clarity</strong></th>
<th><strong>Response Overlapping</strong></th>
<th><strong>Negative Wording</strong></th>
<th><strong>Wordiness</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = No response covers more than one choice.</td>
<td>4 = Exceeds Expectations</td>
<td>4 = Exceeds Expectations</td>
<td>4 = Exceeds Expectations</td>
</tr>
<tr>
<td>2 = Below Expectations</td>
<td>3 = Meets Expectations</td>
<td>3 = Meets Expectations</td>
<td>3 = Meets Expectations</td>
</tr>
<tr>
<td>3 = Meets Expectations</td>
<td>2 = Below Expectations</td>
<td>2 = Below Expectations</td>
<td>2 = Below Expectations</td>
</tr>
<tr>
<td>4 = Exceeds Expectations</td>
<td>1 = Not Acceptable</td>
<td>1 = Not Acceptable</td>
<td>1 = Not Acceptable</td>
</tr>
</tbody>
</table>

- The questions are direct and specific.
- Only one question is asked at a time.
- The participants can understand what is being asked.
- There are no double-barreled questions.
- No response covers more than one choice.
- There are no unnecessary words.
- The questions are asked using the affirmative (e.g., “Which methods are used?” instead of asking, “Which methods are not used?”).
<table>
<thead>
<tr>
<th>All possibilities are considered.</th>
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<tbody>
<tr>
<td>There are no ambiguous questions.</td>
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<tr>
<td>The questions are unbiased and do not lead the participants to a response. The questions are asked using a neutral tone.</td>
</tr>
<tr>
<td>The terms used are understandable by the target population.</td>
</tr>
<tr>
<td>All acronyms are defined.</td>
</tr>
<tr>
<td>The use of technical language is minimal and appropriate.</td>
</tr>
<tr>
<td>Unique situations are handled.</td>
</tr>
<tr>
<td>The responses address all situations or respond appropriately.</td>
</tr>
<tr>
<td>The choices listed allow participants to respond appropriately.</td>
</tr>
<tr>
<td>The questions are sufficient to resolve the problem in the study.</td>
</tr>
<tr>
<td>The questions are unbiased and do not lead the participants to a response. The questions are asked using a neutral tone.</td>
</tr>
<tr>
<td>The terms used are understandable by the target population.</td>
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<tr>
<td>All acronyms are defined.</td>
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<td>The responses address all situations or respond appropriately.</td>
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<td>The questions are sufficient to resolve the problem in the study.</td>
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<tr>
<td>Measure of Construct</td>
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<tr>
<td>---------------------</td>
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<tr>
<td>Personal Perspectives</td>
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<td></td>
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<td></td>
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<td>Measure of Construct: Disposition</td>
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<tr>
<td>Measure of Construct: Perceived Barriers</td>
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</table>
APPENDIX C

PERMISSION TO USE THE VALIDATION RUBRIC
September 23, 2018

To: Kellie Fondren

Thank you for your request for permission to use VREP in your research study. I am willing to allow you to reproduce the instrument as outlined in your letter at no charge with the following understanding:

- You will use this survey only for your research study and will not sell or use it with any compensated management/curriculum development activities.
- You will include the copyright statement on all copies of the instrument.
- You will send your research study and one copy of reports, articles, and the like that make use of this survey data promptly to our attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me.

Best wishes with your study.

Sincerely,

Marilyn K. Simon, Ph.D

Signature

More information can be found in Simon and Goes’s Dissertation and Scholarly Research: Recipes for Success, 2018 edition.

http://www.dissertationrecipes.com/

I understand these conditions and agree to abide by these terms and conditions.

Signed _______________________________ Date _______

Expected date of completion: _____
APPENDIX D

IRB APPROVAL
Protocol ID: IRB-18-522
Principal Investigator: Sandy Devlin
Protocol Title: Serving Students with Moderate to Severe Disabilities: Perspectives of Career and Technical Education Teachers
Review Type: EXEMPT
Approval Date: December 17, 2018
Expiration Date: December 16, 2023

The above referenced study has been approved. To access your approval documents, log into myProtocol and click on the protocol number to open the approved study. Your official approval letter can be found under the Event History section. For non-exempt approved studies, all stamped documents (e.g., consent, recruitment) can be found in the Attachment section and are labeled accordingly.

If you have any questions that the HRPP can assist you in answering, please do not hesitate to contact us at irb@research.msstate.edu or 662.325.3994.
APPENDIX E

RECRUITMENT LETTER
Career and Technical Education Teachers,

You are being invited to share your perspectives in a study exploring the thoughts and feelings, current teaching practices, professional development, and perceived barriers toward teaching students with moderate to severe disabilities in the career and technical education classroom. You qualify to participate in this study because you currently teach in a career and technical education program full time. I ask that you read through the following information to better understand this research study before you agree to participate.

The study is being conducted by myself, Kellie Fondren. I am a doctoral student at Mississippi State University.

The purpose of this study is to better understand how career and technical education teachers feel about students with moderate to severe disabilities being included in the career and technical programs. The current teaching practices that you use within your classroom help determine appropriateness of your classroom environment. Students with moderate to severe disabilities are required to be in an environment where they are able to be as independent as possible with as few supports as possible. Therefore, understanding your concerns will identify barriers that impact their performance within the career and technical education class you teach. The published results of this study will aid in future research to identify best practices in preparing students for life after high school.

If you agree to participate in this study, you will be asked to click the link at the end of this email and respond to the survey items provided. Survey items are multiple choice with two opened ended items to increase accuracy of responses. The survey will approximately take 15 minutes of your time. Once surveys are submitted, participation is complete for this study.

Participation in this study will allow you to voice your opinion and concerns about including students with moderate to severe disabilities into your program and aiding in the process of identifying appropriate placements for providing academic, vocational, and behavioral instruction to progress toward meeting transition goals.

Participation in this study will be anonymous, therefore your responses will not be linked to any information that identifies you.

Participation in this study is also voluntary. You may decline to take part in the study at any time. You may also decline to answer any specific questions you are uncomfortable responding to or withdrawn at any point during participation.

As a participant, you may ask questions about any portion of the research study. I will answer those questions before, during, or after your participation. You may contact me for any further information needed concerning this study.

Contact information:
Researcher: Kellie Fondren
Email: pkb22@msstate.edu
Phone: 662-325-7106
By clicking the link below, you will be guided to the survey. To continue with the survey, you will have to provide consent by clicking the option, *I have been provided information concerning the study and agree to participate.*
https://www.surveymonkey.com/r/ZQQPG5B

Thank you all for your time and assistance,
Kellie Fondren, M.E.
Doctoral Student, Curriculum, Instruction, and Special Education
Mississippi State University
APPENDIX F

CURRICULUM VITAE
Patricia “Kellie” Fondren

**Contact Information**

<table>
<thead>
<tr>
<th>Home</th>
<th>Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>228 Jack Williams Road</td>
<td>313 Allen Hall</td>
</tr>
<tr>
<td>Cedar Bluff, MS 39741</td>
<td>Box 9705</td>
</tr>
<tr>
<td>(662) 495-1119</td>
<td>Mississippi State, MS 39762</td>
</tr>
<tr>
<td>(662) 295-0133</td>
<td>662-325-7106</td>
</tr>
<tr>
<td><a href="mailto:pkb22@msstate.edu">pkb22@msstate.edu</a></td>
<td><a href="mailto:pkb22@msstate.edu">pkb22@msstate.edu</a></td>
</tr>
</tbody>
</table>
**Educational Experience**

2011 – Present **Mississippi State University, Mississippi State, MS**  
Doctoral student in Curriculum, Instruction, & Special Education with a focus in special education  
Focus on current research: Career and Technical Education Teachers perspectives and preparedness to teach students who are significantly cognitively delayed.

M.A., 2010 **Mississippi State University, Mississippi State, MS**  
Master of Science in Special Education with a specialization in Emotional and Behavioral Disorders

B.A., 2008 **Mississippi State University, Mississippi State, MS**  
Bachelor of Science in Special Education with a focus in mild to moderate disabilities grades kindergarten through twelfth.

**Professional Licensure**

- Mississippi, Class AA License # 201551  
- Valid until June 2023  
Endorsements:  
  - 221 – Mild/Moderate Disabilities (K-12)  
  - 910 – Sped Fundamental Subject (K-12)

**University Professional Experience**

January 2015- Present **Mississippi State University, Mississippi State, MS**  
- Instructor for undergraduate coursework in curriculum, instruction, and special education

January 2013 – January 2015 **Mississippi State University, Mississippi State, MS**  
- Adjunct instructor for undergraduate coursework in curriculum, instruction, and special education.

**Undergraduate Teaching Experience:**  
- EDX 3213 – Individualized Instruction of the Exceptional Child and Youth
• EDX 3203 – Introduction to Learning Disabilities
• EDX 3223 – Introduction to Emotional and Behavioral Disorders
• EDX 3233 – Contingency Management
• EDX 4973 – Professional Seminar in Special Education

Graduate Teaching Experience:
• EDX 9413 - Inclusion in the General Education Classroom*
• EDX 6193 – Advanced Planning for Special Education
• EDX 6813 – Assessment Issues in Special Education
• EDX 8023 – Fundamentals of Teaching Learning Disabilities

* Doctoral internship

K-12 Professional Experience

August 2008 – January 2015 West Point High School, West Point, MS
  o Experience in Traditional Diploma, Mississippi Occupational Diploma, and Certificate graduation track.
  o Experience with adapting educational curriculum for mild, moderate, and severe and profound disabilities.

Related Experience

April 2018 – Present Research and Curriculum Unit, Mississippi State, MS
  o Served on the writing team to develop the Alternates Diploma standards for students with significant cognitive disabilities.
  o Aided in developing teacher resource guides for each content area of Alternate Diploma Standards. Teacher Resource Guides include scaffolded performance objectives, real world linkages, relevant vocabulary, and instructional resources.

Presentations


Fondren, K (2014, March). “Parental Perspectives: A failure to communicate in transition Planning”. Poster presented at Graduate Research Symposium, Mississippi State University, MS
and transition activities for students with significant cognitive disabilities.” Lecture presentation at Council for Exceptional Children Conference, Biloxi, MS.


Professional Service

Previous

- Bright Horizons Coordinator
  - A partnership between the local community stakeholders and the school district

- Serve on Academic Achievement Committee
  - This committee provides annual incentives and awards for those students achieving averages of 90 or above.

Current

- Council for Exceptional Children, Mississippi State University student chapter faculty sponsor
  - assist pre-service teachers and related future professionals in events that grow them as an educator, advocacy, awareness, and fundraising.

- Teacher Education Council,
  - Aided in improving relationship between university and local p-12 schools.

- SPA Committee
  - Represented the special education program to collect data in writing the SPA report for the College of Education.

- Promotional and Marketing Committee
  - Plan and organize for providing promotional material for recruitment activities for the Department of Curriculum, Instruction, and Special Education.

Publications


**Professional Development (delivered)**

- Differentiated Instruction
- Transition Planning
- Standards Based IEP

**Professional Development (attended)**

- Inclusion

188
Mississippi Alternate Assessment of Extended Curriculum Frameworks

- Functional Behavior Assessments
- Instruction for students with Autism
- Online Instruction

Awarded Grants/Funding

- Spring 2016, Council for Exceptional Children Mini Grant
  - Funding for the T.E.A.M Fair, a transition fair for students and teachers

Research Interests

The goal of my research is to help increase the number of students with moderate to severe disabilities who are prepared and successful when transitioning from high school to a post-secondary setting. The areas of interest are teacher preparedness, parent, community, student involvement, and aligning goals that are appropriate and beneficial in the transition process. I am also interested in researching communication and the partnership between community, families, and the school.