

SELF-EFFICACY, KNOWLEDGE, AND IMPLEMENTATION OF SECONDARY
TRANSITION EVIDENCE-BASED PRACTICES: TRANSITION PROFESSIONALS'
PRACTICES WITH STUDENTS WITH SEVERE AND MULTIPLE DISABILITIES

by

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ABSTRACT

SELF-EFFICACY, KNOWLEDGE, AND IMPLEMENTATION OF SECONDARY TRANSITION EVIDENCE-BASED PRACTICES: TRANSITION PROFESSIONALS' PRACTICES WITH STUDENTS WITH SEVERE AND MULTIPLE DISABILITIES

Lauren Elizabeth Andersen

For students with severe and multiple disabilities who generally need support after high school culminates, the post-secondary transition is a critical time period in which transition professionals and parents/guardians must come together to plan for the child's future. Researchers from the National Secondary Transition Technical Assistance Center (NSTTAC) have identified secondary transition evidence-based practices (EBPs) that transition professionals can use to help students with severe and multiple disabilities develop critical skills that will enable them to be as successful as possible after high school. The present study utilized a mixed methods design to examine knowledge and implementation of secondary transition EBPs among transition professionals, including special education teachers and transition specialists. In the quantitative component of the study, a broad group of transition professionals who worked with students with severe and multiple disabilities reported on their levels of experience, professional development and training, university preparation, self-efficacy, and knowledge and implementation of

transition EBPs. In the qualitative component of the study, semi-structured interviews were conducted among a smaller subset of special education teachers of students with severe and multiple disabilities to further understand their experiences and practices related to secondary transition EBPs and perceived barriers. Results of the quantitative component of the study revealed significant associations among professionals' reports of self-efficacy and professional development and training, and their knowledge and implementation of transition EBPs. Findings from the qualitative component of the study revealed that special education teachers reported numerous responsibilities in their work with students with severe and multiple disabilities. Additionally, the following barriers were cited to implementing transition EBPs: priority given to academics, legal requirements, and lack of knowledge of transition and the adult service system. Together, both components of the study underscored the importance of continued work on this relatively under-studied population of students, those with severe and multiple disabilities, who are in need of effective post-secondary transition practices to improve their post-school outcomes.

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Chapter I

INTRODUCTION

Background and Need

Individuals with disabilities in the United States have long been reported to have poor post-school outcomes (Blackorby & Wagner, 1996; Hasazi, Gordon, & Roe, 1985; Test, 2008). After transitioning out of secondary educational settings, many students with disabilities have difficulty finding a job, experience behavior and emotional problems, and have limited access to peers. For students with *severe and multiple disabilities*, the challenges after high school are even greater (Corona, Christodulu, & Rinaldi, 2017; Mazzotti & Plotner, 2016; Powers, Gil-Kashiwabara, Geenen, & Powers, 2005). Given the significant challenges faced by students with severe and multiple disabilities and the poor post-school outcomes they frequently experience, there is a need for highly trained and specialized transition professionals who support their needs and use effective practices. It is critically important to determine whether such professionals utilize evidence-based practices (EBPs) during students' transition time period. To that end, the present study utilized a mixed methods design to examine factors related to

knowledge and implementation of transition EBPs among a sample of transition professionals whom worked with students with severe and multiple disabilities.

In an attempt to improve post-school outcomes for students with disabilities, the Individuals with Disabilities Education Act (IDEA, 2004) was reauthorized to require schools to participate in transition planning for students with disabilities. There are many stakeholders who take part in this collaborative process including special education teachers, general education teachers, transition specialists, family members, and the student himself/herself, as appropriate. The goal of such planning is to seamlessly transition each individual student with a disability into a rich and meaningful adulthood.

Special education teachers of secondary students with disabilities play a large role in developing and implementing transition programming; however, some may disregard transition planning for students with severe disabilities despite the federal mandate (Holthaus-Stuart & Smith 2002). Indeed, research has shown that many school districts and special education teachers are not in compliance when it comes to transition plans (Bambara, Wilson, & McKenzie, 2007). In a 2005 study, 399 IEPs of students aged 16-22 from two different school districts in the United States were examined for accuracy and completeness according to the transition mandates of IDEA (Powers et al., 2005). Results indicated that 63% of transition goals provided little or no detail regarding the targeted goal. When categorized by disability, students with intellectual disability, ASD, and multiple disabilities were less likely to be involved in the IEP process, less likely to have post-secondary goals that mentioned or incorporated their individual interests, and more likely to have an employment recommendation that was stereotypic of their disability (Powers et al., 2005).

Transition specialists work collaboratively with the student's team by providing an integral link to the adult service system. Further, transition specialists prepare students with disabilities for adulthood by supporting "special education teachers with resources and information to develop vocational curricula" (Plotner & Dymond, 2017, p. 92). While their role is an important one, there is a lack of research to confirm transition specialists' "specific activities, approaches, and contributions to the curriculum students receive while they are in school" (p. 89).

Research suggests that transition planning is a worthwhile and beneficial process, as students with severe and multiple disabilities who experienced transition programming had better post-school employment outcomes than those who did not (Test et al., 2009). To assist transition professionals in implementing effective transition instruction, the National Secondary Transition Technical Assistance Center (NSTTAC, 2010) has identified a variety of evidence-based practices (EBPs) in the area of secondary transition (Plotner, Mazzotti, Rose, & Carlson-Britting, 2016). In federal legislation such as the No Child Left Behind Act (NCLB) and IDEA, teachers are required to use EBPs, or teaching strategies that have been repeatedly proven through research to be effective, in their practice (Feuer, Towne, & Shavelson, 2002). However, there is limited research on the implementation of EBPs in the context of transition, as well as factors related to transition professionals' knowledge of transition EBPs (Mazzotti et al., 2016; Morningstar, 2005; Plotner et al., 2016) and implementation of transition EBPs.

It is imperative to focus on the unique needs of students with severe and multiple disabilities because there is limited information about this at-risk population. This is further exacerbated by the lack of uniform terminology when referring to students with

severe and multiple disabilities throughout the literature (Carter, Austin, & Trainor, 2011). Even within the National Longitudinal Transition Study-2 (NLTS2, 2010), the largest and most comprehensive nationally representative study of transitioning youth with disabilities, there is no distinction between individuals with mild/moderate disabilities and those with severe disabilities; rather, data are reported by disability category, despite specific disabilities having a spectrum of impairments and undiagnosed comorbid conditions, such as autism spectrum disorder (ASD).

Many secondary special education teachers feel unprepared to fulfill transition related responsibilities, which may adversely affect their students' post-secondary outcomes (Benitez, Morningstar, & Frey, 2009; Wolfe, Boone, & Blanchett, 1998). One potential reason for this lack of readiness may be the lack of adequate preparation in university-based programs. In a 2003 survey, less than half of pre-service special education teacher programs offered a course that was exclusively based on transition (Anderson et al., 2003). In a more recent study, the majority (i.e., 62%) of educators indicated that they did not gain knowledge of EBPs for transition age youth with disabilities in their teacher preparation programs (Plotner et al., 2016). While these studies reveal a lack of adequate university preparation among special education teachers, such findings are not specific to special education teachers of students with severe and multiple disabilities.

Some transition professionals, including special education teachers, have greater transition-related knowledge than others, yet it is unclear how competence is gained (Plotner et al., 2016). Past work on professional development and training of special education teachers more broadly showed that such training was related to an increase in

the likelihood of the implementation of one EBP and greater levels of self-efficacy (Corona et al., 2017; Ross, 1998). More specifically related to transition practices, teachers who perceived that they had knowledge in the area of transition were more likely to implement transition activities into their classrooms (Benitez et al., 2009; Knott & Asselin, 1999). Unfortunately, however, many teachers report not being trained on the implementation of transition EBPs. In a study of teachers' reported level of training, 68% of educators reported "never" or "seldom" being provided with training regarding transition EBPs (Plotner et al., 2016). Additional research is necessary to identify the relationship between professional development and training in regard to knowledge and implementation of transition EBPs for students with severe and multiple disabilities.

While stakeholders are charged with the task of preparing students with severe and multiple disabilities for adulthood, individual qualities such as personal beliefs and knowledge, internal thoughts, and instructional decisions may impact transition professionals' use of various practices and methodologies, thus having an effect on student achievement and outcomes. The model of teacher thought and action (Clark & Peterson, 1986) is one theory that describes the reciprocal relationship between teachers' thoughts, actions, and behaviors on their students' learning, behavior, and outcomes. Professionals' beliefs about *how much* they can do to educate their students, or self-efficacy, is related to the use of more effective techniques in and out of the classroom. Self-efficacy is associated with a range of beneficial teaching practices, such as the inclusion of EBPs in instruction (Corona et al., 2017). High levels of self-efficacy also have positive effects on student outcomes, including achievement in various academic subjects, enhanced motivation, and increased self-esteem (Ross, 1998). There is

currently no available research on special education teachers of students with severe and multiple disabilities in terms of the link between their self-efficacy their knowledge and implementation of transition EBPs.

Statement of the Problem

In general, there is limited research on the unique needs of students with severe and multiple disabilities in terms of transition planning practices, despite the critical need for continued post-high school programming for these students. Most transition-oriented research focuses on individuals with mild/moderate disabilities or categorizes individuals with disabilities (at all intellectual and adaptive functioning levels) as one group. Moreover, the much of the post-secondary research that is available emphasizes individuals with disabilities who are transitioning to college, rather than the population of individuals with severe and multiple disabilities who typically do not continue on to post-secondary education.

To address this research gap, the present study examined the extent to which transition professionals of students with severe and multiple disabilities reported having knowledge of transition EBPs and implementing transition EBPs, and associations between factors such as university preparation, PD/training, experience and self-efficacy on professionals' knowledge and implementation of EBPs. The results of the quantitative survey were supported with five qualitative interviews among a subset of participants who were special education teachers of students with severe and multiple disabilities. In depth interviews explored participants' knowledge and implementation practices of transition EBPs, teachers' beliefs about integral knowledge for transition planning, and

perceived barriers to utilizing transition EBPs. See Figure 1 for the conceptual model for this study.

Figure 1

Conceptual Model



Chapter II

REVIEW OF LITERATURE

The purpose of this chapter is to describe the body of literature that provides a context for the current study. To provide justification for the study's focus on students with severe and multiple disabilities, the review begins with an overview of post-school outcomes for students with disabilities in general, followed by a description of the limited research on post-school outcomes for students who have severe and multiple disabilities. Specifically, the review emphasizes outcomes in the areas of employment, independent living, and community/social engagement, and implications for individuals and their families. Next, a description of the post-secondary transition, transition legislation and federal policy is provided, followed by research on the impact of secondary school experiences, including the use of evidence-based practices (EBPs) on student outcomes. Finally, research on factors associated with professionals' knowledge and use of transition EBPs, such as university preparation, professional development/training, and self-efficacy, will be reviewed.

There is no population of students that requires more support in one or more areas of major life functioning than those with severe and multiple disabilities. For the

purposes of the current study, the definition of an individual with a severe and multiple disability will conform to the standards provided by IDEA (2004): “Having multiple disabilities is defined as having concomitant impairments, the combination of which causes severe educational problems that cannot be accommodated in special education programs solely for one of the impairments.” Additionally:

having a severe disability refers to an individual who, because of the intensity of their physical, mental, and/or emotional problems, needs highly specialized education, social, psychological, and medical services in order to maximize their full potential for useful and meaningful participation in society and for self-fulfillment.

Within the present review, an individual with a severe and multiple disability fulfills these criteria found in IDEA (2004).

In the research literature there is not one uniform label that has been used to refer to students with severe and multiple disabilities. Various terms have been used to describe these students, which complicates the process of identifying past research focused exclusively on them. Terms such as “moderate and severe disability” (MSD), “individuals with intellectual disability,” “ASD,” “severe/multiple developmental disabilities” (SMDD), and “individuals with intellectual disability and ASD,” have been used to refer to this subgroup of individuals with disabilities in research articles.

Although there are a variety of terms used to define this population, hereafter the term “severe and multiple disabilities” is used.

Traditionally, post-secondary success is measured by the percentage of students who go on to attend college; however, given the nature and needs of individuals with severe and multiple disabilities, success is often conceptualized as a broader construct. For this subgroup of individuals, quality of life may be a more appropriate measure of

success. Quality of life includes dimensions such as social inclusion, interpersonal relationships, material and physical well-being, and self-determination (Schalock, 2000), all of which are related to desirable post-school outcomes for individuals with disabilities. The National Secondary Transition Technical Assistance Center (NSTTAC) has been charged with the task of identifying EBPs related to secondary transition. In organizing the available research, NSTTAC assesses each research article relative to one of three outcome areas: employment, education, and independent living. Since many individuals with severe and multiple disabilities may not attend post-secondary education, the review of the literature for the present study examined the available research on post-school outcomes in the areas of employment, independent living, and community habilitation for individuals with disabilities. Additionally, the review highlighted the limited research on the subgroup of individuals with severe and multiple disabilities when available.

Post-School Trends in Employment for Individuals with Disabilities

Individuals with disabilities have experienced poor post-school employment rates for many years (Blackorby & Wagner, 1996; Greenfeld, & Lockyer, 1967; Hasazi, Gordon, & Roe, 1985; Kobayashi & Murata, 1992; Test, 2008). However, thanks to progressive federal legislation and a revitalized effort to improve the lives of all individuals with disabilities, school to work programs and transition programs have provided opportunities for individuals with disabilities to obtain gainful employment. Overall, employment rates among individuals with disabilities appear to be higher than ever (NLTS2, 2010). However, the whole does not necessarily equal the sum of its parts.

When grouped by disability category (such as ASD) or severity of disability, employment rate outcomes do not look so positive. Employment outcomes continue to be a major concern for individuals with certain disabilities (i.e., intellectual disability) and those who meet criteria for the subgroup of severe and multiple disabilities (Newman, Wagner, Cameto, & Knokey, 2009; NLTS2, 2010).

Historically, adults with disabilities were not likely to be gainfully employed. In their seminal work on employment among individuals with disabilities, Rutter, Greenfeld, and Lockyer (1967) studied 63 individuals who were diagnosed with ASD in the 1950s. When these individuals with ASD reached the age of adulthood, only three of them had paid jobs. In other words, 96% of adults with ASD in this sample were unemployed. Since then, some progress has been made. In a study of 187 young adults with ASD, only one fourth of the individuals were found to be employed, revealing that 75% of such individuals were still unemployed (Kobayashi & Murata, 1992). Although the rates of unemployment among individuals with ASD in the 1950s and 1990s are quite alarming, when comparing these two studies to modern day statistics, employment rates are showing some improvement.

The National Longitudinal Transition Study-2 (NLTS2, 2010) provides the largest and most up-to-date data set on post-school employment trends among individuals with disabilities. In the NLTS-2 study, individuals were asked to report the disability category for which they met eligibility from the list of 13 disability categories in IDEA. The data were reported in two ways: separated by individual disability category and aggregated among them all. When aggregated data were reported, 71% of individuals with disabilities surveyed reported that they held paid employment after graduating high

school. Individuals with disabilities were *just as likely* to have paid employment as their typical peers, whose employment rate after graduation was 70% (NLTS2, 2010). While this finding demonstrates the progress we have made as a society, further examination of the data when separated by disability category reveals that we still have more work to do.

Research indicates that there are several high-risk populations of individuals with disabilities for whom employment rates continue to lag behind those of their peers. In particular, individuals with ASD have lower employment rates than individuals with any other disability (Shattuck et al., 2012; NLTS2, 2010). From 2003-2009, data were collected on employment rates among individuals with various disabilities in the NLTS-2. Individuals with multiple disabilities and/or ASD had the lowest rates of having had a job at any point since graduating high school (62.5% and 63.2%, respectively) among individuals from any other disability category, including youth with other health impairment, who had an overall employment rate of 96% (NLTS2, 2010). Individuals with severe and multiple disabilities experience less than half the rate of continued post-secondary employment than other individuals with disabilities (Newman, Wagner, Cameto, & Knokey, 2009).

Research has begun to investigate factors related to the lower rates of employment among individuals with ASD, intellectual disability, and/or multiple disabilities compared to individuals with other disabilities. First, research suggests that individuals with severe intellectual disability were less likely to have an employment goal on their post-secondary plan, a factor that is an evidence-based predictor of possessing gainful employment in adulthood (Baer, Daviso III, Flexer, McMahan Queen, and Meindl, 2011 Nord, Hamre, Pettingell, and Magiera, 2018). The number of years that passed since an

individual with a disability graduated or aged out of the school system was also related to his/her employment status. This theme was most prevalent among individuals with ASD. The first two years after high school graduation was the time period in which individuals with ASD were least likely to have gainful employment. One study found that young adults with ASD who had recently graduated from high school had competitive employment rates of 17% (Taylor and Seltzer 2011). In another study, individuals with ASD who had graduated from high school four years prior had an employment rate of 37% (Newman et al., 2009). Six years after individuals with ASD graduated high school, 55% of individuals with disabilities held gainful employment (Shattuck et al., 2012). As the number of years post-high school graduation or aging out of the school system increases for individuals with ASD, the likelihood that they will be employed also increases. However, these individuals are more likely to stop working as they age into later adulthood. By the age of 60, individuals with disabilities' employment rates had dropped 50% in comparison to their typical peers, whose employment rate had dropped by only 35% at the same age (Mitchell, Adkins, & Kemp, 2006). Across the lifespan, the late start to and early end from employment result in individuals with disabilities working for significantly fewer years than their typical peers.

Finally, individuals with disabilities who are gainfully employed earn lower wages than their typical peers. On average, individuals without disabilities earn \$13.20 per hour, whereas individuals with disabilities earn \$9.40 per hour (NLTS2, 2010). The disparity in wages was even more apparent when examining specific disability categories. In particular, individuals with intellectual disability and ASD made the least amount of

money per hour, at \$7.60 and \$7.70, respectively (NLTS2, 2010). At this time, there is no available research on whether severity of disability is associated with wages earned.

Post-School Trends in Independent Living for Individuals with Disabilities

Over the last few decades, there have been many advances in the lives of individuals with disabilities, particularly in the area of independent living. Institutions with high numbers of residents, low numbers of staff, and rampant stories of maltreatment are mistakes of the past. Yet, obtaining information about where individuals with disabilities live, if they are not in residential support settings, is extremely difficult (Larson, Doljanac, & Lakin, 2005). Thus, data on the details of independent living rates for individuals with disabilities after high school are limited.

Many college campuses have created programs for individuals with disabilities to assist them with post-secondary independent living goals. These programs typically offer coursework on banking, employment skills, and independent living skills, rather than standard collegiate coursework required for an associate's or a bachelor's degree. Oftentimes, individuals with disabilities who are considered to have mild/moderate disabilities are able to take advantage of these programs, whereas those who have severe and multiple disabilities may not possess the minimum skill requirement to acquire admission into such programs. The Taft College Transition to Independent Living is one such program that was designed for individuals with disabilities and is housed on a college campus. In a study regarding the outcomes of this transition program, 90% of graduates reported receiving independent living services, and 67% of individuals with disabilities lived alone (Ross, Marcell, Williams, & Carson, 2013). Although this study

did not delineate if individuals had mild/moderate or severe and multiple disabilities, one can assume that the sample represented individuals who were higher functioning and capable of gaining admissions to the college program, and thus may not have been representative of the overall population of individuals with disabilities. For example, in 1995, there were reportedly 4.25 million individuals with intellectual disability/developmental disabilities in the United States, yet 334,430 of these individuals lived by themselves or with a roommate (Larson et al., 2005). Additional research is needed to obtain updated and accurate information about independent living among individuals with disabilities and specifically, about the subgroup at the forefront of the current study.

Post-School Trends in Community/Social Engagement for Individuals with Disabilities

The transition from high school to adulthood has a major effect on individuals' abilities to maintain friendships and other forms of social engagement. When individuals with disabilities are school aged, school hours provide a structured time during which they are assured to see friends. Without the structure of school, the frequency and nature of students' friendships and interactions are subject to change (NLTS2, 2010). After high school, it becomes more difficult for students with disabilities to participate in programming that contains a similar peer body and as high frequency peer interactions as are available within a school community. According to the NLTS-2, one-fifth of youth with ASD or multiple disabilities saw friends often (2010). This is in stark contrast to the number of individuals with ASD or multiple disabilities who saw friends regularly while

in school. Individuals with ASD or ID are among the least likely individuals to see friends outside of school. Indeed, findings from NLTS-2 suggest that “relative to youth with learning disabilities, those with orthopedic impairments, ASD, or multiple disabilities are between 14 and 21 percentage points less likely to see friends outside of school and organized groups at least weekly independent of other differences between them” (NLTS2, p. 7-23, 2010).

The severity of an individual’s disability appears to be adversely related to the likelihood of seeing friends after high school has ended. Independent of other differences between disability categories, individuals with intellectual disability or multiple disabilities are “17 percentage points less likely to see friends often than are youth with learning disabilities, and when more functional domains are affected by their disabilities, the likelihood of frequent friendship interactions falls even lower” (NLTS2, 2010, p. 8-8).

The issue of loneliness after the transition from high school to adulthood is present in many individuals’ lives, although those with severe disabilities may have difficulty communicating such feelings of isolation. For example, when interviewed by researchers about new experiences after high school, one young man with a significant disability, who had recently begun attending a day habilitation program, broke down and cried while describing the loneliness that he had been experiencing. Additionally, when the participant’s mother was asked if her son had any interactions with people outside of the day habilitation program, she responded that she could not remember the last time he

had communication with someone outside of his placement (Clegg, Sheard, Cahill, & Osbeck, 2001).

For individuals with disabilities, having limited daytime activities or being alone during the day was associated with higher rates of “disorganized thinking” (Dykens, 2007, p. 276). Post-school experiences for individuals with disabilities may result in fewer opportunities available to participate in social aspects of daily life, in comparison to typical peers and/or high school years. Many individuals with disabilities reported having no daytime activities after high school. Approximately 13% of adults with intellectual disability or ASD were without daytime activities (Taylor & Hodapp, 2012) and 40% or more of youth with intellectual disability or ASD spent most of their time watching TV or videos (NLTS2, 2010). Additionally, individuals with intellectual disability and those with multiple disabilities were least likely to take part in organized community groups or volunteer activities up to 2 years after leaving high school, in comparison to youth representative of all other disability categories (NLTS2, 2010, p. 8-8).

Siblings also reported similar rates of low daytime programming and social interactions of their brother/sister with a disability. In one study, 13% of siblings of individuals with ASD or intellectual disability indicated that their sibling had no vocational or educational activities (Taylor et al., 2003). The remaining 87.4% of siblings surveyed indicated that their sibling with a disability engaged in at least one activity, with the majority participating in a day activity program (30.7%) and another 28.1% worked in a supervised workshop. When thinking about adults with disabilities

without daytime activities, it is clear that these individuals may be sitting at home with nothing to do on a daily basis.

The lack of regular social interactions for adults with disabilities has negative implications on typical siblings as well as the entire family unit. Siblings of those with ASD/intellectual disability who did not have activities planned experienced worse health in comparison to those who did have adequate programming. Only 18% of typical siblings with a brother or sister who had intellectual disability or ASD reported excellent health in comparison to 29% of typical siblings who had a brother or sister with ASD/intellectual disability who had daytime programming (Taylor et al., 2012).

Overall, the research on post-school trends in the areas of employment, independent living, and community engagement revealed that students with disabilities are making overall progress in these areas of post-school outcomes. However, this does not hold true for individuals with disabilities who are representative of specific disability categories such as individuals with ASD, individuals with multiple disabilities, and individuals with intellectual disability. Additional research is needed to focus on the subgroup of individuals who have the greatest post-school need for support and programming, as there is little available knowledge of current outcomes for these individuals.

There are plenty of opportunities for transition professionals to engage in preparation and planning for students' post-school life well in advance of the actual transition from high school to adulthood. In fact, planning for the future of a student with a disability is a required component of middle and high school education. Moreover, there are a variety of practices that transition professionals can utilize to engage in

effective planning for a student's future. Planning is even more important when a student's disability is so severe that he/she will continue to require support after high school. Ultimately, transition professionals—including special education teachers and transition specialists—must be knowledgeable of transition practices to fulfill the mandated components of the post-secondary transition.

The Post-Secondary Transition

The post-secondary transition is the process by which an individual culminates high school experiences and enters adulthood. According to Wells, Sandefur, and Hogan (p. 805, 2003), “the transition to adulthood occurs over a multiyear period in the lives of most individuals beginning in the late teens or even earlier and continuing through a good part of the twenties.” Students with mild/moderate disabilities may look forward to the post-secondary transition and have many options such as college, pre-vocational work, or part-time/full-time employment. However, for students with severe and multiple disabilities who will continue to need support after high school, the post-secondary transition changes their daily routine significantly.

Since the beginning of students' educational careers, schools have acted as the coordinator of services, working collaboratively with parents/guardians of students with severe and multiple disabilities to individualize educational plans and provide related services to targeted areas of need. However, in the United States, once an individual with a severe and multiple disability turns 21 years old and completes the school year, there is no longer an entitlement to services. Adult services are eligibility-driven, and it is possible to be eligible for services and not receive them due to a lack of funds (Certo et

al., 2008). In most American states, adult service systems are stretched to the limit—the number of adults receiving funding for services is increasing while the amount of funding provided from the federal government is being cut (Prouty, Smith, & Lakin, 2006; Taylor & Hodapp, 2012). After young adults leave high school, students with disabilities and their parents must become their own advocates for service and supports (Everson & Moon, 1987; Henninger & Taylor, 2014).

If parent-guardians wait until their child with a severe or multiple disability has finished high school to begin the process of applying for adult services, their child may experience a gap in services between the last day of high school and when their new programming will begin. The process of gaining eligibility for adult services is lengthy, as completing, collecting, and submitting all required documentation can take years. After students with severe and multiple disabilities have attended school for most of their lives, a gap in services may result in a serious setback, leading to academic regression, loss of skill development, and/or social isolation.

Transition Services and the Law

According to IDEA (2004), the term “transition services” is a coordinated set of activities for a child with a disability that:

“(1) is designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child’s movement from school to post-school activities, including postsecondary education, vocational education, integrated employment (including supported employment); continuing and adult education, adult services, independent living, or community participation; (2) is based on the individual child’s needs, taking into account the child’s strengths, preferences, and interests; and (3) includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and, if

appropriate, acquisition of daily living skills and functional vocational evaluation [34 CFR 300.43 (a)] [20 U.S.C. 1401(34)].”

Local education agencies have some flexibility in regard to carrying out the federal law and state interpretations; however, all public schools are required to fulfill this mandate for students with disabilities who have an IEP. The transition mandate in IDEA requires state and local agencies to begin planning for a student’s future long before he/she graduates and enters adulthood.

The actual process of transition planning varies in each state and school. What is consistent, however, is the shared responsibility of the school district to ensure that transition planning, also known as transition services, is being practiced. Stakeholders such as general education teachers, special education teachers, transition specialists, families, and students themselves must be prepared to participate in an ongoing collaborative process and offer their expertise to drive best practice in transition planning for each individual student’s future (Holthaus-Stuart & Smith, 2002).

An ideal transition plan has no gaps in services between school and adult services. For students transitioning out of the school system, the day after graduation should look no different than the day before (Certo et al., 2008). The key in preventing gaps in services is being proactive and organized in transition planning. By investigating characteristics of students with disabilities and their parents prior to the transition, researchers may be able to identify circumstances and characteristics that are more likely to result in a “seamless transition” (Test, 2008).

Although transition planning is a necessary component for all students with disabilities, each student’s plan may look different depending on disability category or

level of functioning. For example, transition planning for students with moderate to severe intellectual disability appeared to consist of lower employment and post-secondary education expectations than students with other disabilities (Grigal, Hart, & Migliore, 2011; Pennington, Courtade, Ault, & Delano, 2016).

Although many researchers have found that job skills training has led to greater rates of competitive employment among individuals with disabilities after high school, federal mandates may preclude school districts from preparing individuals with disabilities with the curriculum that they need the most. According to researchers, the Elementary and Secondary Education Act (ESEA) places heavy emphasis on academics, leaving little room in the curriculum for teaching functional and job-related skills (Bouck, 2010; Kim & Dymond, 2010). Despite the importance of job-related trainings, individuals with disabilities may not be able to participate in vocational programs due to school districts' prioritization of academic content areas. This finding is troublesome when considering the importance of obtaining gainful employment after high school for individuals with severe and multiple disabilities and the current unemployment rates among individuals within this subtype.

While school districts must adequately prepare individuals with disabilities for life after high school and consider their transition needs, a variety of state agencies assist individuals with disabilities and their families in obtaining gainful employment and necessary support to maintain employment. The Vocational Rehabilitation (VR) agency in each state is a key partner with school districts to improve employment rates and

community engagement among individuals with disabilities (Benz, Lindstrom, & Latta, 1999; Will, 1984). VR participation is most common in a student's final year of high school (Brewer et al., 2011). Individuals with significant disabilities are able to access services that are free of charge through their local VR agency. These services assist them in maintaining gainful employment and utilizing appropriate support to assist them in performing daily on the job tasks. Research has found that holding a paid job while in high school was the greatest predictor of post-secondary gainful employment for students with severe and multiple disabilities (Carter, Austin, & Trainor, 2012). Both school districts and adult service system supports such as VR agencies can work together to support individuals with severe and multiple disabilities while they transition from high school into adulthood.

The Impact of Secondary School Practices on Post-Secondary Outcomes

High school experiences affect transitional outcomes of individuals with severe and multiple disabilities. Taking vocational education classes, having paid job experiences, and receiving transition programming led to better student post-school employment outcomes for individuals with severe and multiple disabilities (Test et al., 2009). High school programming and coursework are critically important to the post-secondary success of all students, particularly those with significant disabilities. Key elements of high school preparation programs may have an impact on the likelihood of obtaining gainful employment for these individuals. A variety of factors in high school

may predict more desirable outcomes in adulthood for individuals with severe and multiple disabilities.

In a review of 13 studies that examined factors predicting post-secondary competitive employment, paid employment while an individual was still in high school was the strongest predictor of paid employment after high school among individuals with severe and multiple disabilities (Southward & Kyzar, 2017). In fact, when students with severe and multiple disabilities were competitively employed while in high school, they were two times more likely to be gainfully employed after high school as well (Southward & Kyzar, 2017). Many individuals with severe and multiple disabilities enjoy routine-oriented tasks that are both structured and predictable. When students are employed while in high school, they benefit from work experiences in natural settings, which enables them to develop social skills and job specific skills (Carter et al., 2012; Hartman, 2009). Additionally, having the experience of paid employment in the past appears to be beneficial to gaining employment after high school because the experiences may be very similar or even identical to one another.

Participation in a vocational program in high school is another factor associated with increased likelihood of individuals with severe and multiple disabilities obtaining competitive employment after high school. Individuals who had participated in a vocational training program were 1.5 times more likely to acquire competitive employment into adulthood (Flexer, Daviso, Baer, McMahan Queen, & Meindl, 2011). Additionally, in a 2011 report by the National Secondary Transition Technical Assistance

Center (NSTTAC), students with disabilities who participated in community-based instruction to develop social skills and job training and were more likely to be competitively employed after high school graduation. This speaks volumes to the importance of providing work experiences to students with severe and multiple disabilities while they are still in high school. Based on these findings, the future employment success of individuals with severe and multiple disabilities may depend on access to and participation in a high school vocational program.

Aside from prior paid work experience and participation in a high school vocational program, curricular coursework is another important predictor of employment status for individuals with severe and multiple disabilities. High school special education programs must include a functional curriculum that enables students with disabilities to develop essential skills that will allow them to transition smoothly into adulthood. A functional curriculum must consist of functional academics, vocational education, community access, daily living skills, financial skills, independent living skills, transportation skills, social skills, and self-determination skills (Patton, Cronin, & Jarrrels, 1997). To assist individuals with severe and multiple disabilities in overcoming behavioral challenges and social skills deficits, a functional curriculum coursework is essential to future success.

Aside from programmatic opportunities and work experiences, a student's secondary teacher can be the driving force behind his/her immediate and post-school success. One study found that middle school students "were three times as likely to

report engagement if they experienced highly supportive teachers” (Klem & Connell, 2004, p. 270). Engagement was found to be directly related to student performance and higher test scores (Klem & Connell, 2004).

Evidence-based Practices during the Secondary Transition

Evidence-based practices (EBPs) or teaching strategies that have been repeatedly proven through research to be effective, are mandated components of K-12 education in the United States for all students (Feuer et al., 2002). A variety of definitions exists for the term EBP; however, for the purposes of the present study, EBPs were defined as “practices that are supported by multiple, high-quality studies that utilize research designs from which causality can be inferred and that demonstrate meaningful effects on student outcomes” (Cook & Cook, 2011, p. 72).

Despite the federal mandate to utilize EBPs, there often exists a gap between research evidence and classroom practice (Cook & Schirmer, 2006). In research on both general education and special education settings, teachers themselves had a great deal of responsibility to employ EBPs; however, there were mixed levels of implementation in practice (Agran & Alper, 2000; Cook, Tankersley, Cook & Landrum, 2008; Cook, Tankersley, & Landrum, 2009). Special education teachers had poor implementation rates of such practices in their classrooms. One study found that special education teachers were more likely to use traditional sources such as personal experiences and expert opinion to determine what works in the classroom, rather than utilizing EBPs (Cook & Cook, 2011). In a similar finding, special education teachers were more likely

to choose interventions that they thought would work best for their students but were not likely to investigate if the intervention was evidence-based (Burns & Ysseldyke, 2009). A recent study found that less than 5% of educators used EBPs with their students with ASD, and only one-third of special education teachers used any strategy that was rated as evidence-based or promising (Hess, Morrier, Heflin, & Ivey, 2008). Even when special education teachers recognized and supported the worth of evidence-based practices in the classroom, these teachers actually had low implementation rates of EBP when investigated in their daily practice (Jones, 2009).

Specific to transition EBPs, research revealed “a gaping hole between what the research says that teachers and transition providers should provide and what actually happens at school” (Plotner et al., 2016, p. 40). Since the professional field of transition specialists is relatively new and still evolving, the research demonstrated that “there is no mechanism that ensures that transition professionals from the various disciplines share common competencies or complementary competencies” (DeFur & Taymans, 1995, p. 39). Transition specialists make up a broader group of transition professionals “who are typically responsible for implementing a “coordinated set of activities” with other educators, families, students, and representatives” (Li et al., 2009; Morningstar & Clark, 2003). However, “the field is far from knowing specifically which EBPs work for specific subgroups of students (e.g., autism, developmental disabilities) under which conditions” (Plotner et al., 2016, p. 41).

The NSTTAC is the federally funded research center charged with identifying secondary transition EBPs. NSTTAC researchers Test et al. conducted an extensive review of literature to identify EBPs in the area of secondary transition. “In order to be

included in the review, articles had to have met the following criteria: (a) published in peer-reviewed journals published between 1984 and 2008, (b) included students with disabilities participating in secondary education aged 11 to 22 years, (c) described a transition service as the independent variable or predictor variable, (d) included a dependent variable or outcome variable aligned with one of the five areas of the Taxonomy for Transition Programming (Kohler, 1996) (Test et al., 2015, p. 257).” The study reported in-school and post-school outcomes. From there, articles were evaluated based on the quality of research conducted. Group experimental design studies were evaluated using criteria from Gersten et al. (2005) and single subject designs were evaluated using criteria from Horner et al. (2005). “The current list of EBP includes strategies for teaching students a variety of secondary transition skills including academic skills, employment skills (e.g., completing a job application, job specific skills), individual education program (IEP) participation skills, social skills, and independent living skills (e.g., purchasing skills, banking skills, leisure skills) (Test et al., 2015, p. 257).” For the purposes of the current study, each secondary transition EBP outlined by Test et al. is described. See Table 10 for the full list of transition EBPs and definitions used in the current study.

There is a great deal of evidence to support the effectiveness of chaining strategies (backward chaining, forward chaining, total task training), prompting strategies (system of most prompts, system of least prompts, response prompting), and time delay strategies (progressive time delay, constant time delay) (Cooper, Heron, & Heward, 2019). Based on a rigorous review of individual research studies, the aforementioned strategies were identified as secondary transition EBPs for students with disabilities (Test

et al., 2015). Specifically, the following definitions have been used for these strategies.

Backwards chaining was defined as “a student performing the final behavior in a task analysis sequence and being reinforced once the task has been performed, at which time the next-to-last behavior is introduced to the student” (Cooper et al., 2019, p. 258).

Forward chaining was defined as “teaching behaviors identified in a task analysis in their naturally occurring order” (Cooper et al., 2019, p. 258). Total task training refers to training a student on each step of a task analysis during every instructional setting.

Prompting strategies refer to the amount of assistance provided to a student to enable him/her to complete a task. Teachers may typically give maximum assistance in the beginning (system of most prompts) and fade to less prompting, or they may begin with little assistance and provide increasing support as necessary (system of least prompts; Cooper et al., 2019).

Similarly, several strategies enable students to self-monitor their behavior and actively participate, including: Self-Determined Learning Model of Instruction (SDLMI), self-management, self-management strategies, and published curricula (Test et al., 2015). According to the authors, “SDLMI is an instructional model that teaches students to become self-regulated learners in order to gain self-determination skills and includes three phases that provide students with opportunities to set a goal, develop a plan to address the goal, and evaluate changes to successfully meet the goal” (Test et al., 2015, p. 259; also see Agran, Blanchard, & Wehmeyer, 2000). Self-management and strategies related to self-management are two distinct secondary transition EBPs, the second of which is viewed from an academic intervention perspective. Cooper et al. (2019, in Test et al., 2015) defined self-management as monitoring or evaluating behavior in order to

change and control a subsequent behavior (p. 259). Similarly, self-management strategies include self-instruction, goal setting, self-evaluation, and self-monitoring (Test et al., 2015). Finally, four specific published curricula exist as secondary transition EBPs to assist students about how to participate in their IEP meetings and the transition planning process (Test et al., 2015). The four published curricula are representative of one broad secondary transition EBP but include the following programs: *Self-Advocacy Strategy* (Van Reusen, Bos, Schumaker, & Deshler, 1994); *Self-Directed IEP* (Martin et al., 2006); *Whose Future Is It Anyway?* (Wehmeyer & Lawrence, 1995); and *Check and Connect* (Sinclair, Christenson, & Thurlow, 2005).

Additionally, there are a variety of secondary transition EBPs that can be used to effectively teach students necessary material including visual displays, peer assistance, mnemonic strategies, simulation, and the “One More Than” strategy (Test et al., 2015). Visual displays are “representative tools used to facilitate learning” and include “tree diagrams, graphic organizers, concept maps, thinking maps, and structured overviews” (p. 259). Peer assistance is the practice of one student teaching another. This EBP includes peer tutoring, cooperative learning, and peer instruction (Test et al., 2015). Simulation refers to practicing skills in the classroom prior to entering the community and practicing those skills. Simulation is another effective strategy for teaching concepts prior to putting them to use in the community (Test et al., 2015; also see Bates, Cuvo, Miner, & Korabek, 2001). Finally, the “One More Than” strategy, which was initially examined by Denny and Test (1995), teaches students to give one more dollar than requested, so that making exact change is not necessary.

Community-based instruction and parent training modules are also two strategies that Test et al. (2015) identified in their review of secondary transition EBPs.

Community-based instruction was defined as “functional skills that take place within the community where target skills can be practiced within a natural environment” (p. 259; also see Brown et al., 1983). Parent training modules were initially studied by Morsink in 1988 and were defined as “training packages in which a single topic or small section of a broad topic is studied for a given period of time to parents” (Test et al., 2015, p. 258).

Both computer-assisted instruction and technological interventions are secondary transition EBPs. Test et al. (2015, citing Okolo, Bahr, and Rieth, 1993), defined these as “using a computer or some other type of technology to improve students’ skills, knowledge, and academic performance” (p. 258). Similarly, technological interventions involve “using some form of computer-based instruction to teach a variety of academic skills to students” (p. 258).

A recent study examined and compared secondary special education teachers’ knowledge and implementation of secondary transition EBPs with that of transition specialists’ across seven domains: (1) participation in the IEP transition planning process, (2) self-determination skills, (3) social skills, (4) employment skills, (5), life skills, (6) academic skills, and (7) parent involvement (Plotner et al., 2016). Results indicated that transition specialists had greater knowledge and implementation of six out of seven secondary transition EBP domains, with the academic domain was the only domain which special education teachers had greater knowledge of and/or more frequent implementation (Plotner et al., 2016). This study magnified the need for more information surrounding the current knowledge and implementation of secondary

transition EBPs among the broader group of transition professionals, which include special education teachers, general education teachers, and transition specialists, who spend the most time with students who are on the cusp of transitioning into adulthood. Furthermore, additional work is needed on professionals working with students with severe and multiple disabilities.

Factors Associated with Professionals' Implementation of Transition EBPs

In regard to secondary transition EBPs, Plotner et al. (2016) found that there is a discrepancy between research and practice. Despite research evidence supporting the benefits of EBPs, there is unfortunately inconsistent implementation of such practices in schools (Plotner et al., 2016). There is a clear need for more research on transition professionals' knowledge and implementation of secondary transition EBPs (Mazzotti et al., 2016; Morningstar, 2005; Plotner et al., 2016). This work is particularly needed for professionals who work with students with severe and multiple disabilities. A variety of factors may be related to professionals' knowledge and implementation of secondary transition EBPs, including their previous university preparation programs, professional development and training, and their own self-efficacy as a professional working with students with severe and multiple disabilities.

University preparation programs. Transition professionals, including special education teachers and transition specialists, must acquire critical skills and information to effectively work with students with severe and multiple disabilities. Yet, the issue of where these transition professionals acquire such information is an important one. At the

university level, there is some debate about how special education teachers who intend to work with students with the most significant disabilities should be prepared and if that preparation should be different from those teachers who plan to work with students who have mild/moderate disabilities (Courtade & Ludlow, 2008). One study found that only 30 out of 50 states in the United States offered separate certification for working with students with severe and multiple disabilities (Ludlow, Conner & Schechter, 2005). To date, there is not one uniform framework that colleges and/or universities across the United States use to instruct preservice secondary special education teachers on their future work with students who have severe and multiple disabilities. The unique needs of this group of individuals with disabilities lends itself to specialized training in areas that are critical to students' post-secondary success such as transition EBPs. Even so, the existing model of instructing preservice secondary special education teachers of students with severe and multiple disabilities may perpetuate discrepancies among special education teachers, such as the identification and implementation of transition EBPs.

From the limited research that is available, it is clear that most secondary special education teacher programs do not provide adequate instruction in the area of transition EBPs. In programs that are exclusive to future special education teachers, less than half of teacher-preparation programs offered a course that was exclusively based on transition (Anderson et al., 2003). Similar results were found in a study of how and where secondary special education teachers obtained knowledge of secondary transition EBPs. Results indicated that 62% of educators “disagree” or “strongly disagree” that they gained knowledge of EBPs for transition age youth with disabilities in their teacher preparation programs (Plotner et al., 2016). The data collected from the aforementioned

studies are not exclusive to teachers of students with severe and multiple disabilities, revealing a need for more research in this area specific to those who teach students at high risk for poor post-school outcomes.

As a whole, teacher certification programs in the United States continue to evolve with the needs of all students and legislative amendments. Many states in the United States now require all pre-service teachers, regardless of area of educational focus (e.g., English, music) to take coursework on ASD. Given the increased prevalence of ASD and the likelihood that teachers will encounter students with ASD in the classroom, the coursework is seemingly critical in today's world. Despite the course requirement, many of these courses on ASD do not address any EBPs at all (Barnhill et al., 2011), resulting in a lost opportunity to acquire critical knowledge.

Furthermore, the field of transition specialists is relatively new and continues to evolve. "With the influx of transition-focused professionals and the need for improved transition planning and services, university personnel preparation programs focusing on transition have emerged" (Anderson et al., 2003; Morningstar & Benitez, 2013; Plotner et al., 2016). Yet when information was sought from faculty who worked with pre-service transition specialists at the university level, the majority of faculty surveyed "did not believe that their...program offers enough content related to secondary transition" (Plotner, & Fleming, 2014, p. 38). Overall, university preparation programs are intended to fully prepare preservice transition professionals to acquire critical knowledge to be able to fulfill the responsibilities of their positions. However, the literature reveals that there is a need for pre-service transition professionals to gain knowledge of EBPs more

broadly, especially secondary transition EBPs for students with severe and multiple disabilities.

Professional development and training in transition. Professional development (PD) and training in the area of transition may also be related to transition professionals' knowledge and implementation of EBPs. The results of an ongoing three-year PD were analyzed in an attempt to increase academic rigor for teachers of students who had severe and multiple disabilities, which included PD on transition. The PD was provided by consultants, who were trained prior to the implementation of the PD. When asked to rate their competence on providing PD to special education teachers prior to implementing the PD, the area that consultants reported feeling least competent in was transition. Results indicated that PD had a positive impact on special education teachers of students with severe and multiple disabilities. Of the 52 special education teachers who participated in the study, 94% indicated that their coach had a moderate to large impact on improving their skills. Additionally, classroom observations of these teachers revealed that the majority of participants had improved their instruction in transition and other areas and utilized more EBPs in instruction than at baseline (Courtade et al, 2017).

PD and on-the-job training appear to have an impact on special education teachers' likelihood of implementing transition-related activities in the classroom. In a study that focused exclusively on PD and transition EBPs, only those special education teachers who believed that they had significant knowledge in the area of transition were likely to implement transition-related activities (Benitez et al., 2009; Knott & Asselin, 1999). If PD and training provide critical knowledge for special education teachers, one might expect these opportunities to be abundant for such professionals; however, training

opportunities specific to transition EBPs are unfortunately limited. Sixty-eight percent of educators reported “never” or “seldom” being provided with training regarding transition EBPs (Plotner et al., 2016). Instead, 48% of educators reported that they gained critical transition-related information through reading professional journals (Plotner et al., 2016).

Some special education teachers report having no experience or training in the field of transition, yet many manage to acquire skills and learn what they can to effectively fulfill transition planning mandates (Plotner et al., 2016). Individual teacher-characteristics may be the differentiating factor between special education teachers who have knowledge in this critical area and those who do not. Interestingly, transition specialists also report a lack of professional development and training specific to transition EBPs. When asked about being provided with training regarding transition EBPs, fifty percent of transition specialists reported “never” or “seldom” being provided with training (Plotner et al., 2016). Additionally, “forty-five percent of transition specialists reported ‘seldom’ or ‘never’ receiving resources related to transition” (p. 34). The literature suggests that transition professionals, including special education teachers and transition specialists, may be lacking opportunities in professional development and training.

Self-efficacy. The qualities, characteristics, and beliefs that school professionals possess are so important that they can be related to students’ academic achievement and other outcomes (Carlson, Lee, & Schroll, 2004). Self-efficacy, or personal beliefs about one’s capability to help students make progress, is one such idea that is related to student achievement and outcomes (Holzberger, Philipp, & Kunter, 2013). A variety of studies have documented how self-efficacy is associated with a range of beneficial teaching

practices. Although there is no research on the self-efficacy of transition specialists in particular, work on special education and general education teachers suggested that self-efficacy may be an important factor to consider in the study of secondary transition EBPs.

Self-efficacy has been shown to be associated with a range of beneficial teaching practices, such as the inclusion of EBPs in instruction (Corona et al., 2017). Teachers with high self-efficacy were more likely to have better classroom management, set higher goals for student learning, use effective instructional strategies, and exert more effort while planning and exerting lessons in comparison to teachers with low self-efficacy (Allinder, 1994; Holzberger et al., 2013; Ross, 1998; Tschannen-Moran & Woolfolk-Hoy, 2001). High levels of self-efficacy have been related to positive implications for student outcomes- including achievement in various academic subject, enhanced motivation, and increased self-esteem (Ross, 1998).

Because many individuals with disabilities are educated in less restrictive environments such as general education settings, some research has examined the self-efficacy of general education teachers when working with students with special needs. One such study found that when general education teachers were asked to provide strategies for their students with challenges, teachers with high self-efficacy were more likely to provide instructional strategies, rather than to blame the problem on home-related issues (Soodak & Podell, 1994). Special education teachers who had higher self-efficacy took on challenges, committed themselves to theory, were flexible and open to new practices, and supported student learning as well as their own professional

development (Caprara, Barbaranelli, Borgogni, & Steca, 2003; Hartman, 2012; Jennett, Harris, & Mesibov, 2003).

Another study examined variables associated with school professionals' self-efficacy in working with students with ASD including knowledge of ASD, years of experience, ASD training, and implementation of EBP both before and after approximately 20 hours of training on an ASD-specific EBP called "Prevent-Teach-Reteach (PTR)." Training in the area of ASD was the best predictor of higher reported self-efficacy. At post-test measures, participants' number of years of experience and knowledge of ASD were not significant predictors of self-efficacy; however, self-efficacy and knowledge improved once participants completed the training. This study supports the notion that greater knowledge of EBPs may enhance school professionals' cognitions when working with students with ASD (Corona et al., 2017).

High levels of self-efficacy for special education teachers may also be related to a plethora of other favorable measures. In a study of self-efficacy among 35 special education teachers of students with ASD, teachers were asked to complete a survey which consisted of measures on self-efficacy, teacher burnout, and leadership support. Results indicated that the number of years of teaching experience was not related to self-efficacy, but that teachers who were more confident in their teaching abilities had lower levels of teacher burnout. Additionally, there was no relationship between perceived leadership support on self-efficacy level for teachers of students with ASD (Ruble et al., 2011). Together, these findings support the notion that, among special education teachers of students with ASD, self-efficacy may help to buffer some of the adverse factors associated with special education such as teacher burnout.

Theoretical Framework

Teacher cognition, thought, and action have been studied for many decades and yet these research topics continue to evolve. Individual teacher differences and their effects on their instructional practices were at the crux of the present study; several theoretical frameworks supported this work. The field of psychology has offered many explanations for how and why people differ in their unique qualities such as their thoughts, knowledge, and beliefs, and how these covert differences affect their overt behavior. When applied to teachers, these theories continue to support how beliefs and thoughts shape students' achievement and outcomes and how this affects educators' future teaching.

Prior to the 1950s, much of psychology focused on observable behaviors rather than internal thoughts and beliefs because these behaviors were easier to see and measure. Teachers themselves were viewed as effective or ineffective based on observable measures such as student achievement and outcomes (Clark & Peterson, 1986; Guerrero, 2005). Kelly (1955) introduced seminal work on an individual's thoughts and beliefs and their effects on future knowledge and actions. Kelly's personal construct theory (PCT) recognizes that "a person's processes are psychologically channelized by the way in which he anticipates events" (p. 46). According to Kelly, no two people anticipate events in the same manner, even if they are in attendance at the same event. Knowledge is gained as a result of experiencing an event, and future events are anticipated differently based on acquired knowledge. As such, individuals differ in their ability to predict future experiences based on their past experiences. Although Kelly did

not apply his theory to transition professionals specifically, many subsequent theories have built upon Kelly's (1955) work as a way to examine individual thoughts and beliefs on a person's actions and experiences.

In 1986, Clark and Peterson introduced the model of teacher thought and action, which consists of two major domains: teachers' thought processes and teachers' actions and their observable effects. This progressive model is circular or cyclical to demonstrate the reciprocal effects of thoughts, behaviors, and outcomes for teachers on students and vice versa. For example, "teachers' actions are in a large part caused by teachers' thought processes, which in turn affect teachers' actions" (p. 18). Teacher thought processes are comprised of three major tenets: teacher planning (pre-active and post-active), teacher's interactive thoughts and decisions, and teachers' theories and beliefs.

In considering the important role that transition specialists play in students' lives who are approaching the post-secondary transition, one could argue that the broader group of transition professionals may also uphold the model of teacher thought and action when considering their roles and responsibilities in working with students with severe and multiple disabilities. Although not teachers, transition specialists participate in transition planning, experience interactive thoughts and decisions when working directly with students with disabilities and have theoretical knowledge and beliefs of which practices and skills are required to prepare students with disabilities adequately for adulthood.

Of importance to the present study is the third tenet of Clark and Peterson's (1986) model of teacher thought and action, which underscores the importance of theories and beliefs on actions and student outcomes. Clark and Peterson defined

theories and beliefs as “the rich store of knowledge teachers have that affects their planning and their interactive thoughts and decisions” (p. 16). The theory supports the notion that teachers, and perhaps the broader group of transition professionals, have their own unique knowledge base of and beliefs about instructional techniques, and the ones that they choose in turn affect their students and outcomes. What professionals know, or their measure of knowledge, has evolved into a broader construct that includes day-to-day practice such as years of experience, formal schooling, university programs, and ongoing professional development (Calderhead, 1996; Verloop, Van Driel, & Meijer, 2001). Given the nature of students with severe and multiple disabilities, special education teachers and transition specialists may have specific knowledge of strategies or secondary transition EBPs that affect their planning and instructional decision making, in addition to their interactive thoughts while working with such students. Additionally, years of experience, university programs, and/or professional development in the area of transition EBPs may have an effect on the knowledge and implementation of transition EBPs among the broader group of transition professionals who work with students with severe and multiple disabilities.

The model of teacher thought and action also sheds light on the interplay of constraints and opportunities, which also have an effect on professionals’ thoughts and actions (Clark & Peterson, 1986). For example, teachers’ actions are often constrained by “the physical setting or by external influences such as the school, the principal, the community, or the curriculum” (p. 13). Additionally, “teachers’ thought processes also may be constrained because they may perceive that they have less flexibility in their planning because certain curriculum decisions have been made already by the school

district or principal” (p. 13). Moreover, teachers’ perceptions may be constrained by their beliefs regarding their own self-efficacy in facilitating positive outcomes for their students with severe and multiple disabilities.

Similarly, transition specialists who work with students with severe and multiple disabilities may also experience constraints of both their thoughts and actions. For example, transition specialists who work with students with severe and multiple disabilities may believe that they know which educational strategies or curricula their students would learn best from; however, they are limited to what the school provides and/or other district-specific mandates. The challenge is exacerbated by the fact that the roles and responsibilities of transition specialists vary greatly. “The reality is that states, districts, and [transition specialists] have different program structures and personnel” (Plotner et al., 2016, p. 41), thus magnifying the potential constraints on thoughts and actions.

Indeed, research has documented a plethora of barriers that prevent transition professionals more broadly from using EBPs, but especially special education teachers. In a study of perceived barriers among pre-service special education teachers, barriers such as lack of educator knowledge of transition, lack of parental involvement, and inadequate fiscal support were cited as the greatest barriers to carrying out effective transition planning practices (Wandry et al., 2008).

Summary and Rationale

The post-secondary transition is a noteworthy time period in the lives of all students, but may be particularly disruptive for students with severe and multiple disabilities who have grown accustomed to daily routines, expectations, and familiar faces. To ensure the future success of students with disabilities, IDEA requires special education professionals to engage in individualized transition planning while a student is still school-aged to identify an appropriate action plan for after high school. For students with severe and multiple disabilities who may not be able to advocate for their own preferences for the future and who will be in need of continued and/or lifelong support, the transition planning process becomes critically important.

The NCLB requires transition professionals such as teachers and transition specialists to use instructional techniques that have been repeatedly proven through research to be effective, known as EBPs. The NSTTAC has identified a variety of secondary transition EBPs to assist special education teachers with supporting student development of transition related skills by using instructional strategies and curriculum methods. Furthermore, transition specialists collaborate with special education teachers, general education teachers, families, and students with disabilities to make vocational recommendations, devise work programs, and serve as a critical link between the school and adult service system.

Unfortunately, research suggests that there are different levels of implementation of transition EBPs when it comes to transition professionals. Further, there is limited information regarding why some professionals employ secondary transition EBPs and

others do not; however, a variety of factors are associated with those professionals who are more likely to possess transition knowledge and utilize transition EBPs in the practice. The current study examined the relationship among university preparation, PD/training, experience, and self-efficacy as they pertain to transition professionals' knowledge and implementation of transition EBPs for students with severe and multiple disabilities.

Research Questions

Quantitative Research Questions

1. To what extent did transition professionals who work with students with severe and multiple disabilities have opportunities to access knowledge about the secondary transition and/or EBPs through professional development/training or through their university preparation?
 - a. What proportion of special education teachers and transition professionals of students with severe and multiple disabilities engaged in professional development/training in the area of transition EBPs?
 - b. To what extent did transition professionals report gaining knowledge of transition EBPs in their university preparation program?

2. Were transition professionals' reports of their knowledge and implementation of EBPs related to their education, training, or experience?

- a. Was there a positive association between university preparation on EBPs, professional development/training on EBPs, years of experience, and professionals' knowledge and implementation of EBPs?
 - b. Was there a significant difference between special education teachers of students with severe and multiple disabilities who graduated from university teacher preparation programs prior to the federal requirement in 2004 (when IDEA was augmented to include transition planning) as compared to those who graduated following this mandate in terms of their reported knowledge or implementation of transition EBPs?
 - c. Did those special education teachers who held specialized certification in the area of low incidence disabilities have greater knowledge and/or implementation of transition EBPs than those who did not?
 - d. Was there a positive association between the age of transition professionals' students and their knowledge and implementation of EBPs? Specifically, for students with severe and multiple disabilities with higher ages (i.e., for whom the post-secondary transition was closer) did transition professionals report greater knowledge and implementation of transition EBPs?
3. What was the association between transition professionals' self-efficacy, professional development/training, knowledge, and implementation of EBPs?
- a. Was professional development/training in the area of transition related to higher levels of self-efficacy among transition professionals?

- b. Were higher levels of self-efficacy among transition professionals related to greater knowledge and greater implementation of secondary transition EBPs?

Qualitative Research Questions:

4. What do teachers of students who have severe and multiple disabilities report about their knowledge of EBPs in the area of secondary transition?
5. What do teachers of students who have severe and multiple disabilities report about their implementation of EBPs in the area of secondary transition?
6. What knowledge do special education teachers of students with severe and multiple disabilities believe is most important for professionals to know in order to effectively plan students' secondary transitions?
7. What barriers do special education teachers of students with severe and multiple disabilities cite regarding implementation of transition EBPs?

Chapter III

METHODS

Quantitative Component

Research Design

The present study utilized a sequential mixed methods design that was comprised of a quantitative and qualitative component. Data for the quantitative and qualitative components of the study were collected and analyzed separately. The quantitative component consisted of an electronic survey for transition related professionals, including transition specialists, special education teachers, and general education teachers, all of whom worked with at least one individual with severe and multiple disabilities who was between the ages of 14 and 22 within the last calendar year at the time of recruitment. The survey took approximately 30 minutes to complete.

Participants

Participants were individuals who had worked with at least one student between the ages of 14 and 22 years old who had a severe and/or multiple disability within the last calendar year. Participants were 81 professionals. Initially, 83 individuals (64 female, 19 males) started the survey, but 2 individuals discontinued the survey (see Table 1 for demographic information). The analyses were conducted on the 81 individuals who continued the survey. The mean age of participants was $M = 39.2$ years ($SD = 10.1$; age range 21-67 years). Participants in this study were predominantly Caucasian (92.5%), followed by Hispanic/Latino (3.8%), and Black, Asian, and Indian, which each were represented by the same number of participants (1.3% respectively).

Table 1

Participants' Sex and Ethnicity

Characteristics	n	%
Sex		
Female	64	77.1
Male	19	22.9
Ethnicity		
White/Caucasian	74	92.5
Black/African American	1	1.3
Hispanic/Latino	3	3.8
Asian	1	1.3

Indian	1	1.3
Not answered	1	

Participant characteristics. Participants reported information about the geographical state they worked in, their job titles, their earned certifications, the greatest number of students with disabilities they can have in a class (if applicable), and the general disability make-up of the individuals they serve.

The most predominant state in which participants worked was New York (67.5%), followed by Texas (7.5%), Illinois and California (3.8%, respectively), and Alabama, Ohio, and Maryland (2.5%, respectively). There was one participant from each of the following states: Rhode Island, Michigan, Utah, North Carolina, Connecticut, Pennsylvania, Washington, and Arkansas.

Table 2

Demographic Information of Participants' Jobs

Characteristic	n	%
State worked in		
New York	54	67.5
Texas	6	7.5
California	3	3.8
Alabama	2	2.5
Rhode Island	1	1.3
Ohio	2	2.5

Michigan	1	1.3
Utah	1	1.3
Illinois	3	3.8
Connecticut	1	1.3
Maryland	2	2.5
North Carolina	1	1.3
Pennsylvania	1	1.3
Washington	1	1.3
Arkansas	1	1.3
Not answered	1	

Seventy two percent of participants stated that they were special education teachers, whereas 4% were general education teachers, 5% were transition specialists, and 20% of the remaining participants selected “other” and wrote in job titles related to the field of special education such “transition coordinator,” “teacher of the blind,” “special education director,” and “school counselor.”

Table 3

Participants’ Job Titles

Characteristic	n	%
Job Title		
Special education teacher	58	71.6
General education teacher	3	3.7

Transition specialist	4	4.9
Other	16	19.8

When asked about the community in which participants worked, 76.3% of participants reported working in a suburban community, 16.3% worked in an urban environment, and 7.5% worked in a rural community. Among all participants, 71 worked in a public setting (91.0%), whereas 7 worked in private schools (9.0%).

Table 4

Participants' Employment Community

Characteristic	N	%
Employment community		
Urban	13	16.3
Suburban	61	76.3
Rural	6	7.5
Not answered	1	

Participants most frequently reported having more than 16 years of experience (28.7%), followed by 6-10 years of experience (27.5%), 11-15 years of experience (23.8%), 1-5 years (16.3%), and 1 year or less (3.8%).

Table 5

Participants' Years of Experience

Characteristic	n	%
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Years of experience			
1 year or less	3		3.8
1-5 years	13		16.3
6-10 years	22		27.5
11-15 years	19		23.8
More than 16 years	23		28.7
Not answered	1		

When asked about their work with individuals with disabilities, the predominant disability category that participants reported working with was autism (37.5%), intellectual disability (21.3%), multiple disabilities (12.5%), emotional disturbance (8.8%), specific learning disability (10.0%), and other health impairment (6.3%). One participant reported working predominantly with individuals who were visually impaired, including blindness (1.3%); another participant reported working with individuals who had a speech or language impairment (1.3%); and one participant reported working with individuals who predominantly had orthopedic impairment (1.3%).

Table 6

Predominant Disability Category Served

Characteristic	n	%
Predominant disability category		
Autism	30	37.5

Emotional disturbance	7	8.8
Intellectual disability	17	21.3
Multiple disabilities	10	12.5
Orthopedic impairment	1	1.3
Other health impairment	5	6.3
Specific learning disability	8	10.0
Speech or language impairment	1	1.3
Visual impairment (including blindness)	1	1.3
Not answered	1	

Participants reported working with individuals of different ages. Working with individuals ages 16-18 was most frequently reported (32.5%), followed by those aged 11-14 (28.7%), 18-20 years old (16.3%), 14-16 years old (15%), and 20-22 years old (7.5%).

Table 7

Participants' Age Range of Students Served

Characteristic	N	%
Age range		
11-14 years old	23	28.7
14-16 years old	12	15.0
16-18 years old	26	32.5

18-20 years old	13	16.3
20-22 years old	6	7.5
Not answered	1	

Participants were asked to report on their student-to-teacher ratios if applicable, which represented the greatest number of students allowed to be enrolled in the special education class at one time. Thirty-one participants selected the option “other” or “not applicable” and wrote in different answers, including “not sure,” “in Utah there is no cap,” and “transition specialist, not applicable.” For those participants who did select a classroom ratio, the most common one reported was 12:1:1 (16.5%); followed by 15:1:2 (8.9%); 6:1:2 and 8:1:2 (7.6%, respectively); and 6:1:1, 8:1:1, 12:1:2, and 15:1:1 (5% each).

Table 8

Participants’ Student-to-Teacher Ratios

Characteristic	n	%
Class ratio		
6:1:1	4	5.1
6:1:2	6	7.6
8:1:1	4	5.1
8:1:2	6	7.6
12:1:1	13	16.5

12:1:2	4	5.1
15:1:1	4	5.1
15:1:2	7	8.9
Other	17	21.5
Not applicable. I am not a teacher.	14	17.7
Not answered	2	

Recruitment and Consenting Procedure

Participants for the survey were recruited through a variety of methods including social media postings, direct contact with a variety of public schools in New York, and e-mail list-serves. Emails were sent out to various organizations that are pertinent to transition professionals of students with severe and multiple disabilities, including special education teachers and transition specialists. This included a life skills consortium of special education teachers in Nassau County, New York, a life skills consortium of special education teachers in Suffolk County, New York, and middle school and high school BOCES programs. The acronym BOCES stands for Boards of Cooperative Educational Services. BOCES schools and programs represent shared services among local education agencies (LEAs). For example, if LEAs cannot support students with severe and multiple disabilities in their public school programs, they may opt to send the student to a BOCES program where greater support could be provided.

Inclusion criteria included a) participants were certified teachers or transition specialists in a public or private school setting; b) at the time of recruitment or within the

past year, participants had to have worked with at least one individual between the ages of 14-22 years old who had severe and multiple disabilities and met alternate assessment criteria.

The present study utilized the New York State definition for students who require alternate assessment. Specifically, such students are defined as having:

“A severe cognitive disability, significant deficits in communication/language, and significant deficits in adaptive behavior; and the students requires a highly specialized educational program that facilitates the acquisition, applications, and transfer of skills across natural environments (home, school, community, and/or workplace); and the student required educational support systems, such as assistive technology, personal care services, health/medical services, or behavioral intervention (New York State Department of Education, 2017/2018).”

Transition professionals’ self-reported jobs included secondary special education teachers, transition specialists, general education teachers who worked with students who have severe and multiple disabilities. When asked to report their employment position, participants had the ability to select “other.” Participants wrote in job titles such as “transition coordinator,” “teacher of the blind,” “special education director,” and “school counselor.” Because of their previous or current work, as well as their general knowledge of students with severe and multiple disabilities, these participants were also included in the study.

Due to the age in which transition planning must first be initiated for students with disabilities in New York State, participants were required to have worked with at least one student between the age range of 14-22 years old. Students who have severe and multiple disabilities can remain in high school and complete their school year when they turn 21 years old in some states and through their 22nd year in others.

Geographically, participants had to have worked in one of the 50 United States. Federal legislation such as IDEA and NCLB are limited to students who reside and teachers who teach within the United States. Participants were employed part time or full time. Additionally, participants were eligible for the study if they worked as a teacher assistant for a student who met the above-referenced criteria but held additional certification to work as a transition professional (i.e. secondary special education teacher, general education teacher, transition specialist, school counselor).

With regard to informed consent, when participants accessed the link in the invitation email, they were brought to the first page of the survey on the www.Qualtrics.com website, which consisted of an informed consent form. Each participant was asked to type his/her name and the date to indicate consent to use his/her responses. This information was separated from the data collected in the survey, thus participants' responses to the survey were not linked to identifiable information. If participants clicked on the link declining their consent, they were redirected to a webpage thanking them for their time. Participants who completed the survey were entered into a raffle to win one of three \$25.00 Amazon Gift Cards to thank them for their participation.

Measures

Demographic information. Demographic information obtained included each participant's sex, age, race, education level, current job title, teacher certification(s) (if applicable), geographic state in which the participant worked, number of years of experience, and year of graduation from college program. Additional information was collected on the participant's school and the students they served such as current class

ratio (if applicable), average age of student(s) with severe and multiple disabilities served, and if the school workplace was public or private, if applicable to their self-reported job title. Finally, participants reported the primary disability category served, number of years of experience in working with individuals with severe and multiple disabilities, and type of setting the workplace is in (rural/urban/suburban).

Professional development/training. Information was sought on participants' PD/training opportunities and attendance, in addition to university preparation. Five items were derived from Plotner et al.'s (2016) measure on PD/training. Participants were asked how frequently they participate in PD/training, how often they are provided PD/training in transition EBPs, the degree to which they participated in state and national conferences on EBPs, and the degree to which their university program prepared them to use transition EBPs with students with severe and multiple disabilities. The numerical anchors for the response choice scale consisted of a four option Likert scale with numerical descriptors ranging from "1" to "4." In four out of the five questions, the qualitative descriptions for response choices ranged from: "Never" to "Very often," "Strongly disagree" to "Strongly agree," "Never" to "Often," and "One day or less" to "9 or more days." A composite variable, *total PD/training* was created for each participant based on his/her average responses for the 5 questions in the PD/training measure. In the present study, Cronbach's alpha was .854.

Knowledge of transition EBPs. There are 21 established EBPs in secondary transition according to Test et al. (2009). Using the names of the EBPs, the researcher created a teacher knowledge measure by listing the 21-secondary transition EBP and asking participants to rate their knowledge of each secondary transition EBP listed. The

anchors for the response choice scale consisted of a five option Likert scale, with descriptors ranging from “0 = Very little (Know nothing about this practice)” to “4 = To a very great extent (Know a great deal and could instruct others on this.)”

Participants rated their knowledge of each individual transition EBP. A composite variable, *total knowledge* was created for each participant based on his/her average responses for the 21 questions on the Knowledge of Transition EBPs measure. In the present study, Cronbach’s alpha was .899

Implementation of transition EBPs. Plotner et al.’s (2016) measure of evidence-based practices was adapted and used to obtain information on implementation of EBPs. The measure was adapted to include an alphabetical list of the 21-secondary transition EBPs from Test et al. (2009). Specifically, participants were asked to rate their implementation of each secondary transition EBP using a five-point Likert scale, consisting of the anchors “0 = Never (I do not use this practice)”, “1 = On rare occasions (Less than once per week)”, “2 = Sometimes (One or more times a week but not every day)”, “3 = Often (About once per day)” and “4 = Frequently (More than once per day).”

Participants rated their implementation of each individual transition EBP. A composite variable, *total implementation* was created for each participant based on his/her average responses to the 21 questions on the Implementation of Transition EBPs measure. In the present study, Cronbach’s alpha was .854.

Self-efficacy. The present study used the Teacher Efficacy Scale (TES; Woolfolk-Hoy & Hoy, 1990) to measure self-efficacy, which reflected the transition professional’s feelings about his or her ability to complete a variety of tasks related to teaching and student learning. The present study utilized the TES short form, which

contained 12 questions. The measure was modified to ensure that participants' responses referred to their work specifically with students with severe and multiple disabilities.

Participants were asked to respond to a series of questions (e.g., How much can you do to motivate students with severe and multiple disabilities who show low interest in school work?) on a scale from "1 = none at all" to "5 = a great deal".

A composite *self-efficacy* score was created for each participant by averaging his/her responses to the items. Cronbach's alpha for this composite was .906.

Additionally, the TES yielded measures of professionals' self-efficacy in three subdomains: *student engagement*, *instructional strategies*, and *classroom management*.

Cronbach's alpha for the subdomain of student engagement (e.g., "How much can you assist families of students with severe and multiple disabilities to help their child do well in school?") was .723. In the subdomain of classroom management (e.g., "How much can you do to control disruptive behavior from a student with a severe and multiple disability in the classroom?") Cronbach's alpha was .807. The subdomain of instructional strategies (e.g., "How much can you use a variety of assessment strategies to identify strengths/needs for students with severe and multiple disabilities?") had a Cronbach's alpha of .833.

Qualitative Component

Research Design

In the qualitative component of the study, the researcher recruited a subset of participants who were secondary special education teachers of students with severe and

multiple disabilities. The researcher had personal and professional relationships with the participants; therefore, a follow-up inquiry for the additional component of the study was made to seek participation. Five participants who worked as certified special education teachers were contacted for individual in-depth phone interviews, all of whom agreed to participate. The goal of the second component of the study was to garner open-ended information in regard to current practices in transition from middle and high school special education teachers of students with severe and multiple disabilities were currently working in the field. Other transition professionals were not included in this portion of the study. The purpose of collecting this additional data set was to solicit open-ended information about which transition EBPs special education teachers use, and to search for commonalities from the quantitative component of the study. The qualitative portion of the study allowed special education teacher participants to chronicle their own personal thoughts and beliefs about secondary transition EBPs, and to convey information regarding barriers in an open-ended format, without limitation or restriction. Data collection in the qualitative component consisted of telephone interviews between the researcher and individual participants, which are described in detail below. The methodological approach utilized was thematic analysis (TA), as it provided flexibility in focusing on the patterns that were relevant to answering the specific research questions posed (Braun & Clarke, 2012).

The researcher. The researcher is a certified special education teacher who presently works in an elementary school on Long Island, New York. She has 9 years of experience in working with students with severe and multiple disabilities. Prior to working as an elementary special education teacher, she worked as a high school special

education teacher in a public high school life skills program, where she actively practiced transition planning for her students and worked to improve their post-school outcomes. The researcher has earned her Master's degree in severe and multiple disabilities and is pursuing her doctorate in intellectual disability and autism at Teachers College, Columbia University.

Participants

Participants were recruited from their initial participation in the quantitative survey component. The researcher had numerous professional connections to individuals who work as middle school and high school special education teachers of students with severe and multiple disabilities. Therefore, the researcher sought participation from these individuals by telephone. All interviews were conducted via telephone. Additionally, each participant was given a pseudonym and potentially identifiable information such as the name of the school that each participant worked at was changed to maintain anonymity. Participants were able to leave the study or stop the interview at any time; however, each participant answered all questions posed by the researcher in the telephone interviews.

Participant 1, John. John is 31 years old and identifies himself as a Caucasian male. He works at a public middle school in New York. He described the community that he works in as suburban. His job title is special education teacher, and he works with students with severe and multiple disabilities. John has 6 years of experience working as a special education teacher.

Participant 2, Christie. Christie is 50 years old and identifies herself as a Caucasian female. She works at a high school for students with special needs in New York. She described the community that she works in as suburban. Her job title is special education teacher, and she works with students with severe and multiple disabilities. Christie has 20 years of experience working as a special education teacher.

Participant 3, Kiara. Kiara is 34 years old and identifies herself as a Caucasian female. She works at a public high school in New York. She described the community that she works in as suburban. Her job title is special education teacher, and she works with students with severe and multiple disabilities. Kiara has 12 years of experience working as a special education teacher.

Participant 4, Patrick. Patrick is 34 years old and identifies himself as a Caucasian male. He works at a public high school in North Carolina. He described the community that he works in as a mix between suburban and urban, as his school is right outside a city. His job title is special education teacher, and he works with students with severe and multiple disabilities. Patrick has 9 years of experience working as a special education teacher.

Participant 5, Samantha. Samantha is 29 years old and identifies herself as a Caucasian female. She works at a public middle school in New York. She described the community that she works in as suburban. Her job title is special education teacher, and she works with students with severe and multiple disabilities. Samantha has 6 years of experience working as a special education teacher.

Table 9

Demographic Characteristics of Participants

Participant Pseudonym	Sex	Age	Community	School	State	Years of Experience
John	Male	31	Suburban	High School	New York	6
Christie	Female	50	Suburban	High School	New York	20
Kiara	Female	34	Suburban	High School	New York	12
Patrick	Male	34	Suburban-Urban	High School	North Carolina	9
Samantha	Female	29	Suburban	Middle School	New York	5

Recruitment and Consenting Procedure

To be included in the qualitative component, participants had to meet the inclusion criteria of the quantitative study. Additionally, for the qualitative component, participants had to be certified special education teachers working in a secondary setting. Each participant was required to complete an online consent form or paper consent form prior to the phone interview. On the consent form, participants were asked to provide permission for the interview to be audiotaped. After consent was obtained, the researcher did not seek any identifiable information. In the case that participants shared potentially identifiable information while participating in the interviews, all identifiable information was removed from transcripts. All interviews were audiotaped with the QuickTime application on the researcher's iPad. The audio-recordings were transcribed onto a Word Document by the researcher. The interview protocol can be found in Appendix B.

Measures

Semi structured interviews were conducted via telephone. Interviews ranged in duration from 8 minutes to 20 minutes each.

Demographic information. At the beginning of the interview, the researcher collected demographic information for each participant's age, sex, age, school community (suburban, urban, or rural), school level (middle school, high school), and number of years of work experience.

Open-ended interview. Participants were asked five open-ended questions regarding transition EBPs. First, each participant was asked about their own experiences in working with students with severe and multiple disabilities and in what capacity. They were also asked if they were knowledgeable of transition EBPs, and to share information about such practices. Participants were asked to comment on the transition EBPs they use with their students, and to comment on the frequency of implementation of these practices. The researcher asked participants about what knowledge they felt professionals must know in order to effectively transition plan for the future. And finally, the researchers asked the participant to report any barriers they believe exist regarding the implementation of transition EBPs.

Analytic Plan

The purpose of the qualitative component was to seek valuable information about current practices in transition from middle and high school special education teachers of students with severe and multiple disabilities. The researcher conducted these interviews to ascertain whether special education teachers believed they had knowledge of transition

EBPs and to find out if participants in the field cited barriers or perceived specific knowledge as being essential in order to implement transition EBPs. Open-ended interviews were thought to garner authentic data from special education teachers in the field about issues that surround transition and transition EBPs. These research questions were analyzed first by open coding and then through axial coding. The researcher sought experiential information about participants' current beliefs and practices that could not otherwise be uncovered in the quantitative component.

Chapter IV

RESULTS

Quantitative Component

Preliminary Analyses

Prior to conducting the tests of research questions, a description of participants' responses to questions about their knowledge and implementation of each of the 21 transition EBPs was warranted. Table 10 reports descriptive data on transition professionals' reported knowledge of specific EBPs, ranked from highest to lowest level of reported knowledge. On average, participants reported having the greatest knowledge about community-based instruction, simulation, system of least prompts, and visual displays. Conversely, transition professionals reported having the least amount of knowledge about parent training modules, Self-Determined Learning Model of Instruction, and progressive time delay.

With regard to transition professionals' reported implementation of EBPs, descriptive data are reported in Table 11, ranked from highest to lowest level of reported implementation. On average, participants reported that the transition EBPs that they most frequently implemented were visual displays, self-management, and system of least prompts. On the other hand, transition EBPs that were reportedly implemented the least frequently were published curricula, parent training modules, and Self-Determined Learning Model of Instruction.

Table 10

Knowledge of Individual Transition EBPs

Secondary Transition EBP	<i>M</i>	<i>SD</i>	<i>Citation</i>
Community-based instruction	3.65	1.330	Brown et al., 1983
Simulation	3.49	1.264	Bates, Cuvo, Miner, & Korabek, 2001
System of least prompts	3.48	1.231	Cooper, Heron, & Heward, 2019
Visual displays	3.48	1.206	
Self-management	3.42	1.152	Cooper et al., 2019
Technological interventions	3.40	1.196	
Total task training	3.39	1.288	Cooper et al., 2019
System of most prompts	3.33	1.293	Cooper et al., 2019
Computer assisted instruction	3.27	1.075	Okolo, Bahr, & Rieth, 1993
Peer assistance	3.23	1.187	

Forward chaining	3.18	1.214	Cooper et al., 2019
Response prompting	3.17	1.260	Cooper et al., 2019
“One More Than” strategy	3.15	1.437	Denny & Test, 1995
Self-management strategies	3.12	1.222	Cooper et al., 2019
Constant time delay	3.08	1.244	Cooper et al., 2019
Backward chaining	3.05	1.329	Cooper et al., 2019
Published curricula	3.05	1.483	Test et al., 2004; Van Reusen, Bos, & Schumaker, 1994; Martin et al., 2006; Wehmeyer & Lawrence, 1995; Sinclair, Christenson, & Thurlow, 2005
Progressive time delay	3.00	1.376	Cooper et al., 2019
Mnemonic strategies	3.00	1.347	
SDLMI	2.82	1.249	Agran, Banchard, & Wehmeyer, 2000
Parent training modules	2.79	1.376	Morsink, 1988

Table 11

Implementation of Individual Transition EBPs

Secondary Transition EBP	<i>M</i>	<i>SD</i>
Visual displays	3.59	1.233
Self-management	3.58	1.179
System of least prompts	3.51	1.390
Response prompting	3.47	1.311

Computer assisted instruction	3.46	1.119
Technological interventions	3.39	1.155
Simulation	3.37	1.291
Forward chaining	3.29	1.358
Community-based instruction	3.28	1.386
Self-management strategies	3.18	1.266
System of most prompts	2.98	1.328
Total task training	2.98	1.209
Constant time delay	2.98	1.329
Peer assistance	2.80	1.102
“One More Than” strategy	2.61	1.473
Backward chaining	2.59	1.298
Mnemonic strategies	2.55	1.043
SDLMI	2.51	1.182
Parent training modules	2.05	1.288
Published curricula	1.89	1.064

Quantitative Test of Research Questions

Research Question 1. To what extent did transition professionals who work with students with severe and multiple disabilities have opportunities to access knowledge about the secondary transition and/or EBPs through professional development/training or through their university preparation?

- a. **What proportion of special education teachers and transition professionals of students with severe and multiple disabilities engaged in professional development/training in the area of transition EBPs? To**

examine this research question, descriptive statistics were conducted. Data were reported in two ways. To understand how the sample responded, on average, means and standard deviations were provided. Additionally, to offer another view of the data, frequencies for individual answer choices were also reported. Data were first described for the full sample of transition professionals. Because professional development opportunities may have been tied to professionals' specific job titles or certifications, the responses from the sub-group of special education teachers were also described separately, to understand if any differences emerged for this subgroup of participants.

Transition professionals reported on the frequency of training in the area of transition EBPs that was provided in their district or agency. Answer choices included Never = 1, Seldom = 2, Occasionally = 3, Often = 4. The average response across the entire sample was "Seldom" ($M = 2.00$, $SD = .886$). When the frequency of answer choices was examined separately, the most frequently reported descriptor was "Seldom" ($n = 28$, 39.4%), followed by "Never" ($n = 24$, 33.8%), "Occasionally" ($n = 15$, 21.1%) and lastly, "Very Often" ($n = 4$, 5.6%).

Participants were also asked how often they attended training related to secondary transition EBPs. The average answer was "Seldom" ($M = 2.49$, $SD = .919$). Within the sample, response frequencies indicated that participants did not consider themselves to have significant transition EBP training opportunities. The most frequently reported

descriptor was “Occasionally” ($n = 26, 36.1\%$), followed by “Seldom” ($n = 25, 34.7\%$), “Never” ($n = 11, 15.3\%$), and “Often” ($n = 10, 13.9\%$).

Participants were asked how frequently post-secondary transition training was provided. The average answer was one day or less ($M = 1.71, SD = .999$). Within the sample, responses indicated that participants did not consider themselves to have frequent transition training opportunities. The most frequently reported descriptor was “One day or less of training” ($n = 41, 56.9\%$), followed by “2-4 days” ($n = 19, 26.4\%$), “9 or more days” ($n = 8, 11.1\%$) and “5-8 days” ($n = 4, 5.6\%$).

Information was also obtained on the degree to which all participants participated in state and/or national professional development opportunities outside of their district/agency. On average, respondents reported that they “seldom” participated in such PD opportunities ($M = 2.18, SD = 1.032$). In terms of frequencies of individual answer choices, the most frequently reported descriptor was “Never” ($n = 25, 35.2\%$), followed by “Occasionally” ($n = 24, 33.8\%$), “Seldom” ($n = 15, 21.1\%$), and lastly, “Very Often” ($n = 7, 9.9\%$).

Additionally, participants were asked to provide a rating based on the following question: “I have participated in PD opportunities outside of my district (or agency) related to EBPs for secondary students with disabilities (e.g., national conferences; never = 1, Seldom = 2, Occasionally = 3, Often = 4). The average response was Never ($M = 1.69, SD = .904$). In terms of frequency of individual responses, the most frequently reported descriptor was “Never” ($n = 40, 56.3\%$), followed by “Seldom” ($n = 16, 22.5\%$),

“Occasionally” ($n = 12, 16.9\%$), and lastly, “Very Often” ($n = 3, 4.2\%$). Transition professionals who work with students with severe and multiple disabilities reported that they are not typically provided with training opportunities and they do not attend such training often.

Next, special education teacher responses were further analyzed in isolation from the broader group of transition professionals. Such teachers reported whether training in the area of transition EBPs was provided in their district or agency. The average response was “Never” ($M = 1.89, SD = .798$). The most frequently reported descriptor was “Seldom” ($n = 23, 42.6\%$), followed by “Never” ($n = 19, 35.2\%$), “Occasionally” ($n = 11, 20.4\%$) and lastly, “Very Often” ($n = 1, 1.9\%$).

In response to a question about how often they attended training related to secondary transition services, special education teachers, on average, reported “Seldom” ($M = 2.40, SD = .830$). Within the sample, response frequencies indicated that participants did not consider themselves to have significant transition training opportunities. When asked how often they attended transition EBP training, the most frequently reported descriptor was “Occasionally” ($n = 22, 40.0\%$), followed by “Seldom” ($n = 21, 38.2\%$), “Never” ($n = 8, 14.5\%$), and “Often” ($n = 4, 7.3\%$). These findings were very similar to that of the larger transition professionals’ group.

In response to the question about how frequently post-secondary transition training was provided to them, special education teachers, on average, reported “One day or less” ($M = 1.62, SD = .933$). The most frequently reported descriptor was “One day or less of training” ($n = 33, 60\%$), followed by “2-4 days” ($n = 15, 27.3\%$), “9 or more days”

($n = 5$, 9.1%) and “5-8 days” ($n = 2$, 9.1%). Results indicated that, similar to the broader group of transition professionals, the subgroup of special education teachers reported limited training opportunities.

In response to the question about their participation in state professional development opportunities outside of their district/agency, special education teachers reported “Seldom” engaging in such trainings ($M = 2.11$, $SD = 1.003$). The most frequently reported descriptor was “Never” ($n = 20$, 37.0%), followed by “Occasionally” ($n = 18$, 33.3%), “Seldom” ($n = 12$, 22.2%), and lastly, “Very Often” ($n = 4$, 7.4%). These patterns that demonstrate a lack of participation in training opportunities via state conferences were similar for both transition professionals and special education teachers.

Finally, in response to the question about their participation in professional development outside their district (e.g., national conferences) on EBPs, special education teachers reported on average, that they “Never” participated in such trainings ($M = 1.67$, $SD = .824$). The most frequently reported descriptor was “Never” ($n = 29$, 53.7%), followed by “Seldom” ($n = 15$, 27.8%), “Occasionally” ($n = 9$, 16.7%), and lastly, “Very Often” ($n=1$, 1.9%).

b. To what extent did transition professionals report gaining knowledge of transition EBPs in their university preparation program? Transition professionals were asked to report the extent to which they agreed that they gained knowledge of transition EBPs for secondary students with severe and multiple disabilities in their university-based preparation program. On average, professionals reported that they “Disagree” with that statement ($M = 2.16$, $SD = .973$). In terms of the frequency of responses, the following responses were cited in order of most common to least common:

“Agree” (n = 24, 34.3%), “Strongly Disagree” (n = 23, 32.9%), “Disagree” (n = 18, 25.7%) and “Strongly Agree” (n = 5, 7.1%).

Research question 2. Were transition professionals’ reports of their knowledge and implementation of EBPs related to their education, training, or experience?

a. Was there a positive association between university preparation on EBPs, professional development/training on EBPs, years of experience, and professionals’ knowledge and implementation of EBPs? Results of a Spearman correlation revealed that university preparation on the topic of EBPs was significantly positively related to professionals’ knowledge of EBPs, $r(58) = .282, p = 0.032$. Professional development/training on EBPs was related to both reported knowledge, $r(58) = .311, p = 0.018$ and implementation of EBPs, $r(58) = .244, p = .049$. Professionals’ years of experience was not related to knowledge or implementation of transition EBPs.

b. Was there a significant difference between special education teachers of students with severe and multiple disabilities who graduated from university teacher preparation programs prior to the federal requirement in 2004 (when IDEA was augmented to include transition planning) versus those who graduated following this mandate in terms of their reported knowledge or implementation of transition EBPs? For the purposes of this research question, only participants who identified themselves as special education teachers were included in the analyses. Results of an independent samples t-test demonstrated that there was not a significant difference in between participants who graduated before 2004 or after the transition

planning mandate in 2004 in regard to their knowledge of transition EBPs ($t(50) = .980, p = 0.332$) or implementation of transition EBPs ($t(44) = -.450, p = 0.665$).

c. Did those special education teachers who held specialized certification in the area of low incidence disabilities have greater knowledge and/or implementation of transition EBPs than those who did not? For the purposes of answering this research question, data was only analyzed from the sub-group of participants who identified themselves as special education teachers. Special education teachers were asked to list all of their earned state teacher certifications. Two groups were formed based on their responses. The first group consisted of individuals who had earned at least one specialized teaching certification in severe disabilities ($n = 6$). The second group consisted of individuals who had earned generic special education certification ($n = 44$). Due to the small number of participants who identified themselves as having low incidence disability certification, the data were too small to conduct parametric analyses. Descriptive data revealed that, on average, special education teachers with specialized certification reported their knowledge of EBPs to be $M = 4.73$ ($SD = 1.44$) as compared to those without this certification ($M = 3.78, SD = 1.10$). With respect to reported implementation of EBPs, special education teachers reported an average of $M = 3.38$ ($SD = 1.15$) as compared to those without this certification ($M = 2.88, SD = .795$).

d. Was there a positive association between the age of transition professionals' students and their knowledge and implementation of EBPs? Specifically, for students with severe and multiple disabilities with higher ages (i.e.,

for whom the post-secondary transition was closer) did transition professionals report greater knowledge and implementation of transition EBPs? A correlation was conducted to examine the relation between participants' knowledge of transition EBPs, implementation of transition EBPs, and the age of their students with severe and multiple disabilities. Because student ages were grouped into ranked categories (e.g. 11-14, 14-16, 16-18, 18-20, and 20-22) for ease of survey responses and because transition professionals work with a wide range of ages, a Spearman correlation analysis was conducted. Results of the correlation revealed that there was not a significant association between student age and participants' knowledge of transition EBPs ($r(63) = .032, p = 0.801$) or implementation of transition EBPs ($r(56) = .033, p = 0.805$).

Research Question 3. What was the association between transition professionals' self-efficacy, professional development/training, knowledge, and implementation of EBPs?

a. Was professional development/training in the area of transition related to higher levels of self-efficacy among transition professionals? A Spearman correlation analysis was used to examine the above-mentioned association. Results demonstrate that there was a significant positive correlation between PD/training in the area of transition and self-efficacy (composite measure), ($r(72) = .283, p = .016$). With respect to sub-domains of self-efficacy, there was a significant positive association between PD/training and self-efficacy for student engagement, ($r(72) = .264, p = .025$). PD/training was also positively associated with self-efficacy in instructional strategies ($r(72) = .236, p = .046$). Finally, a test of the association between PD/training and self-efficacy regarding

classroom management also revealed a significant positive correlation ($r(72) = .237, p = .045$).

Table 12

Association Between Professional Development/Training and Self-Efficacy by Subdomain

Self-efficacy	Transition professional development/training
Self-efficacy composite	.283*
Instructional strategies	.236*
Classroom management	.237*
Student engagement	.264*

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

b. Were higher levels of self-efficacy among transition professionals related to greater knowledge and greater implementation of secondary transition EBPs? A Spearman correlational analysis demonstrated that there was a significant positive association between participants' reported self-efficacy and their knowledge of transition EBPs ($r(67) = .349, p = 0.004$), as well as between their reported self-efficacy and implementation of secondary transition EBPs ($r(56) = .278, p = 0.035$), such that greater levels of reported knowledge and implementation of transition EBPs were related to participants' greater perceived overall self-efficacy. Additionally, a Spearman correlation revealed that transition professionals' total knowledge was significantly related to their total implementation, ($r(59) = .427, p = 0.001$).

To examine the results further, additional correlation analyses were conducted to identify the relation between subdomains of self-efficacy with both knowledge and implementation of transition EBPs. With respect to the subdomain instructional strategies, there was a significant positive association with knowledge of transition EBPs, ($r(67) = .430, p < 0.00$), as well as a significant positive association with implementation ($r(59) = .297, p = 0.020$). When the subdomain of self-efficacy in classroom management was examined, there was a significant positive association with knowledge of transition EBPs ($r(67) = .254, p = 0.035$), however there was no significant association between self-efficacy regarding classroom management and implementation of transition EBPs ($r(59) = .222, p = 0.086$). Therefore, self-efficacy regarding classroom management appeared to be related to participant perceived knowledge of transition EBPs but not related to the implementation of transition EBPs. Finally, when the subdomain of self-efficacy regarding student engagement was examined, there was not a significant associations with knowledge of transition EBPs ($r(67) = .215, p = 0.076$) or implementation of transition EBPs ($r(59) = .239, p = 0.064$).

Table 13

Correlation Between Transition Professionals' Self-Efficacy and Knowledge/Implementation of Transition EBPs

Variable	Knowledge of Transition EBPs	Implementation of Transition EBPs
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Self-Efficacy Composite	.342**	.278***
Instructional strategies	.430***	.297***
Classroom management	.254*	.222
Student engagement	.215	.239

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Post-Hoc Analysis. Which factor or factors (university preparation, professional development/training, years of experience, self-efficacy, and knowledge of transition EBPs) explain significant variation in transition professionals' implementation of transition EBPs when controlling for all other factors? After the examination of the bivariate correlations, a final post-hoc analysis was conducted to examine whether one or more factors would emerge as most salient in explaining transition professionals' reported implementation of transition EBPs, while controlling for the other factors. A linear regression was conducted to predict implementation of secondary transition EBPs based on transition professionals' university preparation, training, experience, self-efficacy, and knowledge of EBPs. A significant regression equation was found, $F(5, 51) = 3.599, p = .007$, with an R^2 of .26. In this model, transition professionals' reported knowledge of EBPs was found to be a significant

predictor of their reported implementation of EBPs ($p = .010$) after accounting for all the other predictors (see Table 15).

Table 14

Regression to Test Combined Factors Related to Transition Professionals' Implementation of EBPs

	B	Std. Error	Stand. Coeff. Beta	<i>t</i>	<i>p</i>
Dependent Variable: Implementation of EBPs					
Model $F(5, 51) = 3.599, p = .007$					
University Preparation	.162	.115	.184	1.415	.163
Professional Development/Training	.076	.145	.071	.526	.601
Years of Experience	-.009	.098	-.011	-.091	.928
Self-Efficacy	.124	.216	.078	.573	.569
Knowledge of Transition EBPs*	.243	.091	.362	2.677	.010*

Qualitative Component

Emergent Themes

The researcher conducted interviews to collect in-depth information about special education teachers' experience in working with students with severe and multiple disabilities, their perceived knowledge and implementation of transition EBPs, their beliefs about the type of knowledge most important for transition professionals, and their perceptions of barriers teachers of students with severe and multiple disabilities experience with regard to the implementation of secondary transition EBPs. From an evaluation of the interview transcripts, three themes were revealed: (1) "Did we cover all our bases?", (2) "All on our shoulders," and (3) "Did we do enough?" The names of the themes not only represent the commonalities that infiltrated the majority of the interview transcriptions but also serve as quoted remarks from participants themselves. There are several subthemes that serve as the foundational underpinnings of these broad, resounding messages.

Theme 1: "Did we cover all our bases?"

Twenty-one times throughout the interviews, four participants referenced a variety of requirements that they must fulfill based on state and federal law and expressed the delicate balance between meeting lawful requirements and participating in morally

good practice to develop their students' skills. When provided context, the name of this theme is a direct quote, and serves as one participant's rhetorical question when looking back on a student with a severe disability who had recently aged out of the school system. While it may have been spoken by one participant, all participants mentioned ideas and subthemes that uphold this reflective idea. The subthemes that encapsulate special education teachers' experiences in transition are *a). legal requirements, b). academic priority, and c). community-based instruction.*

Legal requirements. Although the interviewer did not directly ask participants to comment on state and federal education law, participants initiated discussion about these issues independently and cited many of them as barriers to implementing transition EBPs. Within the interviews, three participants collectively referenced the law and/or legal requirements seven times. Some participants specified that their students' programs have changed a great deal over time due to ever-changing education law. One participant, who has been in the field for twenty years, cited how her class used to have much more time to be out in the community. She said "we're not doing the same kind[s] of things that we used to do to prepare the kids for transition because of the standards and things that have changed from the state and federal government."

One specific change that several participants commented on was their students' participation in state tests. Two participants discussed how state testing was an inadequate means of measuring anyone's ability or potential exclusively. One of those participants went on to explain how unfair the testing requirement was for students with

severe and multiple disabilities: “We have our own curriculum and they [the state] make them sit and take these tests. It’s always been a point of contention between special ed and the rules that come down.” This participant went on to explain that his students are being mandated to participate in state testing because the district needs 95% of students to test and his students count towards that percentage.

Aligned with the idea of “covering all of your bases,” one participant explained that some of her work must be approved by her administrator, who is a new director of special education. One barrier that she cited is that her new director is nervous about things ““legality-wise.”” Therefore, as a teacher, she feels as if she must ask permission before implementing new and innovative ideas. Occasionally, she seeks permission from her supervisor which results in “roadblocks,” meaning that she is unable to carry out her initial plan.

Academic priority. Four participants discussed how they are often forced to focus exclusively on academics, rather than other common components of life skills education such as daily living skills, community-based instruction, and job skills training. The priority given to academics is often at the expense of transition related EBPs and such activities thought to benefit students with severe and multiple disabilities. The idea that academics are of primary importance was referenced seven times. One participant stated:

The expectation that I’m going to teach academics, academics, academics...that’s the greatest barrier to helping these students transition from school to adult life. They need to be out in the community more.

She further detailed the extent to which teaching academics impedes her ability to perform other job-related responsibilities: “There’s such a push for us to be teaching academics, and teaching academics, that we’re not getting as much time to focus on the life skills and the transition.” Another participant shared that since her students are in middle school and they get to stay at high school until they’re 21 years old, they focus more on academics while the students are younger.

Community-based instruction. In all five interviews, participants mentioned taking their students into the community for some sort of learning opportunity. Many participants detailed the functional nature of various trips, and how the community-based trips were supplemented with instruction in the classroom, first. Community-based instruction was referenced seven different times throughout the interviews. Many destinations were mentioned for community-based outings, including laundromats, grocery stores, shopping malls, and habitat restores.

While present in the community during the school day, participants revealed that their students develop skills in the area of navigating their community and/or work-related skills. Practices such as travel training, vocational training, and job skills training were mentioned by all five participants. Taking a bus, taking a train, working with a job coach, and attending work sites were some of the activities that participants stated their students typically participate in prior to graduating. When asked about the frequency of these trips, one participant stated that they attend grocery stores as often as they can. No

further information as to the frequency of such trips or experiences was provided by the remaining participants.

While many participants shared their community-based instruction exploration with students, some cited perceived barriers to these same activities. Some participants commented on the need for business owners and workers in the community to be open to working with students with disabilities for community-based instruction to work. In a way, this type of programming is dependent on “what the community’s kind of letting you do,” according to one participant. Other participants commented on how difficult it must be for students to participate in community-based instruction if they live in communities that are unwilling to accept them. For the most part, participants had positive experiences to share about their work in the community. One spoke about how wonderful the community has been for her students: “They’re very supportive and it’s easy to get the students involved....people are more willing.”

Community-based instruction is one of 21 transition EBPs (Test et al., 2015), though it is unclear if participants were aware of this. When participants were asked about which transition EBPs they use in the classroom, no one was able to give a specific example or the name of one of these practices. However, through our conversations, and my own examples of common EBPs such as community-based instruction, many participants were able to discuss the types of activities they have their students participate in throughout the community.

Theme 2: “All on Our Shoulders”

Participants repeatedly documented the many different responsibilities they must fulfill as special education teachers of students with severe and multiple disabilities. Furthermore, the majority of participants shared the need to learn about and work alongside an expert who is knowledgeable about transition. Several subthemes emerged including *a). numerous responsibilities, b). on the job experience, c). need for knowledge, and d). transition specialist*. These ideas were referenced 28 times throughout the interview transcripts.

Numerous responsibilities. Three participants described their work in relation to other individuals within the school building, including the students themselves. Administrators, other teachers, job coaches, teacher assistants, and students in general education were also frequently mentioned. Among these groups of individuals, participants cited their responsibilities in relation to working with these individuals five times.

The challenges with managing overwhelmingly large class sizes of students with severe and multiple disabilities was mentioned numerous times across interviews. Although there were not specific research questions that addressed class size, multiple participants initiated conversations surrounding the burden that a large class size places on their positions and their teaching responsibilities. Some participants explained that their student to teacher class ratio was not based on the needs of the students, as is required. Instead, she said she has a larger class ratio (12:1:2) for financial reasons: “It’s

such a disservice to the students because I have students that should be in a 6:1:1.” She went on to explain: “There’s just not enough of me or my assistants to meet the needs of these kids.” Further, another participant explained that he has a class full of 13 students, but he’s had as many as 22 or 23 kids with IEPs in a class at once. When I asked him to elaborate about the maximum number of students that could be in his class legally, he stated that his administration will typically ask him to sign a waiver to exceed the cap. The participant recounted the conversation he had with an administrator when he was asked to sign a waiver to increase his class size beyond the state mandated limit: “I said... what happens if I don’t sign this waiver? And then they said.... Well you make it difficult for people who will make it difficult for you.”

One participant explained how her large class size resulted in negative implications for her students. She stated, there’s “less time for you to interact and work with the students than ever before because there’s so many more responsibilities.” She says she’s been advocating to have smaller student to teacher class ratios in her special education school, but it’s “not really changing much.”

Students with severe and multiple disabilities may engage in maladaptive and/or challenging behavior in the classroom and broader school community. Along with larger-than-expected class ratios, managing challenging behavior appears to add to the long list of responsibilities that special education teachers hold. Challenging behaviors themselves may affect other members of the school community such as general education students and their teachers. One participant told a story about his student, who is

nonverbal and has severe autism. According to the participant, his student ran into a general education English class. “They have no idea what to do with him. It’s usually you know, all on our shoulders from the staff point. The teachers got the mentality of like those are your kids so figure them out.” Another participant had similar experiences when she discussed trying to keep behaviors “at bay.” She mentioned that one of her students had recently been removed from the program due to severe behaviors and the potential interference with students in general education. In our interview, she shared: “It is a little harder obviously in a public setting to maintain some of that stuff... in and around a building of 900 students who, you know, are general ed kids.” When talking about the school community that she works in, she said “it’s just not always the climate to house that type of stuff.”

Training teacher assistants and/or job coaches is another responsibility that many special education teachers are often required to do. The majority of participants referenced working with job coaches and/or teacher assistants in some capacity. Where special education teachers find the time, diligence, and resources to train paraprofessional staff varies greatly. One participant reiterated that training paraprofessionals was challenging and difficult. He stated:

I think training a staff to be a job coach is [a] very difficult training to get accomplished. It’s one thing to be able to sit down with a TA or job coach, whatever job title, and work with them on how they should assist students, how they should let students be independent, how they should travel train with students, how to keep data on students while they’re out there.... I definitely think the biggest hurdle is training the staff that goes out [to the community] with the students every day.

Throughout the interviews, the message became clear: there is an overwhelming number of responsibilities that special education teachers of students with severe and multiple disabilities are charged with. Greater than lawful class sizes, managing challenging behavior, working alongside school personnel, and training teacher assistants were the most frequently cited responsibilities among participants.

On the job experience. Three participants revealed that their competence as a special education teacher of students with severe and multiple disabilities developed from their own experience in trying to make things work. One participant recounted when she first began her position:

It was kind of like here's the population... here's the group. There's no curriculum... there's no real training on this kind of stuff...but they need it. Go. And it was like uhhhh ok. Where do I begin? So it was just constant trial and error of all of that stuff ya know.

Another participant described how she looks to other programs to help develop her own. As a current middle school teacher, she used her district's high school program to help strengthen and develop her own: "Honestly every year it was changing for me.....the more I understood what was being done at the high school, I tried to kind [of] do things that would help the kids transition into the high school."

Two participants mentioned that they created opportunities for their specific students based on their individual needs and interests. They preferred to engage in activities that are thought to benefit their individual students. For example, one participant considered the needs of her students when designing academic and functional tasks: "When I first started I was doing more typing skills, setting the table, organizing

papers, um... every year honestly my class is so different that it depends on the students and um the more I learn I feel like the better I can do the better each year.” Another participant had similar sentiments when she shared her own experience in coming to know what to teach:

It was definitely a lot I had to learn through trial and error of what was absolutely never going to help the kids or benefit the kids. What types of groups I had each year...that would benefit from certain things. If I knew there were certain kids that were never [going to] learn how to use the bus [independently], I would kind of like target my skills in a different direction. So these are I think like more things that I feel like I learned over the years on my own.

Need for knowledge. Although many participants discussed their experience and knowledge of their students’ needs as a predictor of what the focus of their instruction should be, most participants expressed a desire to obtain knowledge and/or training. The need for knowledge or improved learning opportunities for special education teachers was referenced eighteen times throughout the interview transcripts. One participant shared “I wish there were more like you know... information and materials and people that could help guide this type of stuff you know?”

Across the interviews, it was evident that all five participants had—at some point in their careers—hoped for a guidebook or training opportunities for working with their unique population of students. As it stands, many responsibilities tend to fall on participants’ shoulders, and they are often charged with the responsibility of making decisions on their own based on what they *think* their students need and how they can attempt to help. While past experience in teaching this population of students assisted some participants, it sparks my own curiosity to think about how brand-new special

education teachers of this population of students make instructional decisions in this field. When reflecting on current knowledge, one participant stated, “I feel like I learned over the years on my own but there wasn’t a whole lot of um training I would say in that sense.” In a similar fashion, another participant shared that she “brainstorms and researches different things to help students.” Experience and research appear to be common ways that participants fulfill their desire to learn more, in an attempt to be more effective in their position.

Throughout the interviews, transition information appeared to be the most difficult type of information to come by, despite the desire to learn more about this specific area. Yet there appears to be a dearth of information on this topic in practice. One participant explained how she felt about her access to transition information: “I just feel like there’s so much more that all of us can be given in terms of knowledge and information.” Despite the lack of information readily available, many participants acknowledged the importance of keeping parents informed. With the limited information that is available, participants commented on the verbose language that is often disseminated. Some participants spoke about how difficult it is for parents to understand the information provided. One participant explained:

I just feel like in general we don’t have a good amount of information on like... you know in terms of like [adult] services and all that stuff. I feel like we don’t always get exactly what we need in layman terms to be transferred over to the parents. So that kind of stuff is a little overwhelming.

Just as participants used their knowledge of the needs of their students to devise educational plans, they also search for information that is applicable and understandable to the families of their students.

Many participants commented on how difficult it is to keep up with the ever-changing nature of the adult service system, the system in which their current and former students should be connected to upon graduation. Among participants, who worked within two different geographical states, many expressed confusion about the acronyms of vocational rehabilitation services and adult service system offices. In 2010, New York State changed the name of the office that manages the adult service system and thus, the acronym, to eradicate the archaic language once used to refer to individuals with disabilities (i.e. mental retardation).

Additionally, many participants commented on how challenging it is to assist in navigating the adult service system for their students and families. One participant stated “The [adult service system] is just horrendous and it’s not user friendly.” This message was reiterated by other participants. One stated:

Unfortunately I feel like the state is constantly changing what’s required from the families in terms of setting themselves up with like a significant plan and I feel like sometimes it’s like overwhelming to the teacher to be on top of like what the parents exactly need because they’re overwhelmed and they’re not always up to date.

With changes in name, procedure, and process, participants expressed the need to learn the specific intricacies of the adult service system in a way that is easily understood by professionals and families.

Despite all of the responsibilities that special education teachers of this unique population may have, transition appears to be a particular area of stress and confusion. At the end of one of the interviews, a participant, who was referring to her special education colleague, said “I know that the other teacher that I work with in the building...it’s definitely the biggest stressor for us is this whole transition piece.”

Another participant revealed that she tries to help families by connecting them with the adult service agency but doesn’t fully understand how to help them. She said: “I feel like I’m recommending it to parents but when they say oh how do I do that? I’m kind of like... oh... I don’t know... And I... I print some forms offline but like that’s really not that helpful for them.” While many participants chronicled trying to help the families of their students, some appeared to not know how to help because there are so many options available when it comes to the adult service world. One participant compared her experience in watching a student graduate from the general education population with that of her own student. She explained how for students in general education, everyone knows the requirements, everything is laid out, and everyone is on board. When thinking about her own students graduating, she shared: “I just feel like ours is just so open ended.” Having so many potential paths for students to go down—and lacking appropriate and comprehensible information to fully understand each and every path—seems stressful. Participants are in need of transition related knowledge to help students and their families.

Transition specialist. Despite many participants discussing their own desire to learn more about the adult service system in order to assist students and their families, many participants shared that they believe a transition specialist is necessary to complete transition-related work. When considering the multitude of responsibilities that participants documented, and the belief that there is tremendous burden on their shoulders, knowledge and implementation of effective transition planning appear to be of secondary importance. During one of the interviews, one participant redefined her role while conversing about the topic: “I’m not like a transition specialist, but my job is to teach the life skills education program.”

When asked about what knowledge they feel professionals must know to effectively transition plan for the future, several participants mentioned needing an individual who is really knowledgeable about all of the resources that are available to families and students themselves. One participant said, “You need a specialist in every single school to help these kids and help these parents navigate through the system.” These beliefs were reiterated by other participants, who also expressed the need for one person to manage everything related to transition. In the words of one participant:

You really need someone who’s very knowledgeable about the programs that are available to the students after they transition that and that all the documentation and paperwork that was completed during those final years that they are attending public school, getting linked up with [vocational rehabilitation] and [the adult service system].

Analyzing the pattern of participants’ need for transition specialists to work with students enabled me to delve deeper when considering participants’ own internal beliefs.

There are many elements that special education teachers of this population face: the primary importance of teaching academics, managing challenging behaviors and large class sizes, the lack of training, and the need to work collaboratively with building staff and community members. And yet, when it comes to transition, participants prefer for someone else to take the lead and share their knowledge. Participants appear to be focusing on the “here and now,” creating and developing new activities through “trial and error,” and considering the needs of their students to develop appropriate programming. Therefore, they may be less likely to spend their time researching and learning about options for their students’ future, and more hopeful for an expert to serve as the connecting link between families of students with severe and multiple disabilities and the adult service system.

Theme 3: “Did we do enough?”

A third and final theme emerged from the rich set of interview data. The process of a student culminating their high school experiences, aging out of the school system, and entering adulthood is a complex transition for the individual himself/herself, the school staff that supported the individual, and the family. Collectively, these ideas were referenced twenty-five times by five participants. These stakeholders may experience a myriad of different feelings, attitudes, and opinions about the individual with a disability, his/her future. Furthermore, participants reflected on their own role and experience in assisting a student transition out of the school system and consider if they could have

done more. Many participants expressed their personal thoughts about *a). fostering independence* and *b). remaining student centered* when working with students with severe and multiple disabilities. Additional subthemes emerged such as *c). the role of parents* and *d.) concern for the individual's future*. These four ideas became subthemes and will be discussed in depth.

Foster independence. Two participants referenced ideas that supported their shared value of fostering independence within and among their students to enable them to be as successful as possible after high school. When working with students with severe and multiple disabilities, it is less important to have a large scope and repertoire of fragmented skills and more important to demonstrate independence within a given task. When discussing one of his students at a work site, one participant said that the goal would be to make the student as “independent as possible so when it is time to age out, [so] that he can continue that to the best of his abilities.” The idea of encouraging students to be as independent as possible is thought to broaden the scope of what they may be able to accomplish upon graduation.

Student centered planning. All five participants mentioned the importance of knowing students' interests and abilities to help create appropriate plans for the future and these ideas were referenced five times. High quality transition plans incorporate these characteristics of individual learners, and participants acknowledged these values. One participant explained the importance of finding out what a student's interests are, what the student is capable of doing, and using this knowledge to create “the best

possible future for him.” He elaborated and stated that if a student has an interest in clothes, a job site such as “Old Navy” or “Marshalls” might be a good fit for him, and he would be able to visit that site with a job coach and work on travel training to get there. Similarly, another participant shared the same vision of identifying and valuing student interests, abilities, and “limitations”. After considering these elements, he stated “then you have to know what type of activities or jobs would be available based on their [needs].” This participant mentioned some examples of jobs that he envisioned for his specific students such as bringing in shopping carts or running the register at the local supermarket.

Participants mentioned the importance of getting to know their students and families—especially when students themselves have difficulty expressing their own interests, strengths, and needs. One participant stated: [We need to] do what’s right for the students because a lot of them aren’t able to speak for themselves or, you know, express how they’re feeling so it’s up to us.” Another participant explained that by knowing his students well, he is able to empathize with them if they are having a meltdown and it helps him make sense of why it may be happening. Typically, students with severe and multiple disabilities are enrolled in special education classes with a smaller student to teacher ratio than a traditional general education classroom. One participant expressed how the smaller student to teacher class ratio enables him to get to know his students better. In fact, this was one reason why he said he enjoys working in special education.

Parents as stakeholders. The majority of participants engaged in conversations about their students' parents as key stakeholders in their own child's transition.

Participants detailed a variety of different experiences in working with parents, and value them as immensely important members of their child's post-secondary transition.

Participants expressed that parents themselves can facilitate or impede their child's participation in transition activities.

Parents who are knowledgeable of the resources that are available appear to be more likely to take advantage of those resources. One participant explained her own experiences in observing students with parents who were really "on top of things":

They get the most services because they're knowledgeable. There are opportunities for kids to have respite workers come to the house and take them out and help them you know interact in the community go to programs with other teenagers and things like that. So you have these kids that are, that have great parents that are exposed to a variety of experiences just within their family then they get all of this extra help that's available to them.

Further, identifying what the parents' "end plan" is for their own child is the most important knowledge that he could possibly have to effectively plan for transition, according to one participant. He said that knowing what a child's end plan is, whether it's residential or working at a job site, is helpful for him to figure out how to proceed in terms of programming while the student is still in high school.

Three participants expressed the challenges that they face when trying to encourage and assist parents in applying for and obtaining eligibility for adult services. In order to obtain access to adult services, parents themselves must complete detailed paperwork to apply for eligibility. The process can take a great deal of time and is

ongoing, requiring parents to submit updated paperwork periodically. Participants expressed how difficult it is to navigate the adult service system for parents: “sometimes some of them [the parents] shut down a little bit halfway through it so that doesn’t get accomplished which would be their *best* path to have any type of resources.” The main premise of the information that participants shared regarding parents is that they can be helpful or harmful to their child’s post-secondary transition activities based on involvement or lack thereof.

Concern for future. Three participants expressed fear and concern for their students’ future, particularly if the student’s parents were not involved with the transition process. Participants explained how some families are not informed about the process, some at no fault of their own. For example, one participant explained how it is hard for the parents to get on board with what needs to be done because they [the parents] don’t really know a lot of times either. Another participant explained how there are a variety of factors that may contribute to parents’ noninvolvement in the process. Completing paperwork to obtain eligibility for adult services may not be the family’s first priority due to socio-economic reasons. She said:

We have a kid that lives below the poverty level, doesn’t have a lot, family’s not-you know, maybe a single parent family, and they really have access to the same programs and services but they don’t even know about it. These parents don’t come to the parent teacher night, they don’t... they don’t have the ability to. They’re working two jobs. Or, it’s just...it’s really sad.

The idea of the school having boundaries and limits in terms of how much support they could provide to parents, and the concern that this caused, was a common thread

among the interviews. Although many participants expressed desire to help their students and families navigate the system and obtain access to services, they also respected the school's limitations. One participant stated:

I know that, like, we in the school can only do so much and it-it's worrisome like for when they do graduate like then they're in their parents hands and a lot of the times parents don't know about all of these opportunities to get help and you know to help their child.

Similarly, another participant expressed how many parents may seemingly "push off" the idea that their child will soon graduate high school and enter a new reality. "They aren't really ready enough for the fact that 21 comes really quickly and there's so much that needs to be done and we need to be working together better to better prepare these kids." Instead, she said many families are just happy that their child is still in school, and that seems to be comforting to them.

While three participants expressed concern for their own students' future, a few of them elaborated on their personal beliefs and professional concerns regarding how they perceived their performance as the child's teacher, and as a contributing member to that student's livelihood. When reflecting on her own professional experience, one participant shared questions that she grappled with after her students had graduated: "I just feel like sometimes these students graduate at 21 and it's like... did we do enough? Did we cover all our bases?" Still, even in reflection, other special education teachers seem content with their performance considering the various demands and responsibilities of the job. As one participant said, "You know, we do what we can

where we are.” Many participants expressed sentiments that revealed they are doing the best they can and hoping their work is sufficient and enriching for their students’ future.

Throughout the interviews, participants revealed that they foster independence, embrace student interests, strengths, and needs, and support parents throughout the transition process. Yet despite all of the responsibilities that participants said they fulfill, the majority are still curious and some, fearful, of what happens to their students in the future. One participant stated, “It’s worrisome like for when they do graduate like then they’re in their parents’ hands.” The transition to adulthood is not only a monumental transition for students with disabilities, but for their teachers, too. After years of providing intensive support to these students, many participants are left wondering what happens to them when they culminate their high school experiences. As one participant stated, “We get to see what happens while we’re there, but once they’re gone... you don’t really see too much [of] what transpires.” The genuine concern for students’ futures appear to be a consistent thought in the minds of participants who support students with severe and multiple disabilities up through the age of 21.

Chapter V

DISCUSSION

The present study utilized rigorous methods from qualitative and quantitative research to synergistically reveal the factors related to and differences among transition professionals' knowledge and implementation of transition EBPs. Through systematic survey research, specifically targeted data on professionals' reported knowledge and implementation of instructional practices in the area of transition EBPs was gathered alongside participants' perceived self-efficacy, as well as their access to and participation in pertinent training. The introduction of semi-structured interview data supplemented that which was obtained from the survey research to augment the scope of information obtained from the study and to explore issues that relate to, interfere with, or impede on special education teachers' perceived knowledge and implementation of transition EBPs. These data illuminated the altruistic qualities of those interviewed, providing a glimpse into the delicate balance between academic, functional, and transitional skills that professionals of students with the most intense needs are often forced to maintain. As the researcher, the themes that emerged summarize many of the challenges and

considerations that I, myself, experienced when working in a similar capacity to those interviewed, among the same population of students.

Summary of Findings

The quantitative portion of the study yielded a variety of interesting findings. First, at the bivariate level, several factors showed significant positive associations with transition professionals' implementation of transition EBPs. Transition professionals who reported greater knowledge of EBPs tended to also report greater implementation of EBPs. Moreover, those professionals who reported greater professional development/training on EBPs tended to report greater implementation of EBPs. Importantly, when factors were considered in a unitary model, transition professionals' knowledge of transition EBPs was the most salient factor related to their implementation of transition EBPs, even after controlling for the other factors. This finding is important because professionals' knowledge of instructional practices is amenable to change through teacher preparation and professional development practices. However, it is important to note that these and all correlations cannot be interpreted as causal relationships.,

With respect to role of transition professionals' reports of self-efficacy, participants who reported higher rates of self-efficacy also tended to report that they knew a great deal of information about transition EBPs and that they were more likely to implement transition EBPs into their work. Although the positive association does not enable us to infer causality and decipher if self-efficacy was a precursor to being knowledgeable of and implementing transition EBPs, or vice versa, these findings

generate important ideas for discussion that will be considered in greater detail below.

The data were further examined within the context of each of the three subdomains of self-efficacy: instructional strategies, classroom management, and student engagement.

Professionals' sense of self-efficacy regarding instructional strategies was related to their knowledge and implementation of transition EBPs. Additionally, self-efficacy regarding classroom management was significantly related to knowledge of transition EBPs, but not implementation. Interestingly, self-efficacy regarding student engagement was not significantly related to knowledge or implementation of transition EBPs.

In terms of the link between self-efficacy and professional development/training when each of the three sub-domains of self-efficacy were examined, there was a significant positive association found for all three, with a moderate effect size. This finding is particularly meaningful because as aforementioned, self-efficacy in the domain of student engagement was the only domain *not* significantly associated with knowledge or transition of EBPs. There are many considerations that must be taken into account when interpreting this unique pattern of associations, the greatest of which may be the unique needs and profiles of learners with severe and multiple disabilities and what participants' self-efficacy regarding student engagement may reflect. These considerations will be discussed in greater detail below.

Although the study found university preparation on the topic of EBPs to be positively related to professionals' reported knowledge of EBPs, and professional development/training to be positively related to both reported knowledge and implementation of EBPs, there was not, however, a significant association found when considering the years of experience that transition professionals had or the age of their

learners. Additionally, there was not a significant difference in knowledge or implementation of transition EBPs among special education teachers who graduated before or after the transition planning mandate was implemented into federal legislation in 2004.

In fact, when information was sought about transition professionals' experiences in gaining knowledge of transition EBPs from their university preparation program, most of the sample responded that they "Disagree" or "Strongly Disagree" such information was provided. These findings may reveal a concerning disparity between federal law mandates that teachers must abide by, and the lack of relevant coursework and content provided by university-based programs in both secondary special education and transition-related professions. Further, these findings illuminate the need for transition professionals and special education teachers of students who will imminently transition to utilize EBPs within the limited and valuable time they have left to work with such students. Finally, information was sought on participants' professional training opportunities specifically on the topic of transition EBPs. Results demonstrated that teachers of students with severe and multiple disabilities reported a lack of ample professional development or training opportunities in the area of transition EBPs.

Findings from the qualitative portion of the study provided richer detail regarding the above-mentioned processes and augmented the scope of the issues that interfere with and impede on special education teachers' expertise related to secondary transition EBPs across all domains of their instructional positions. Several themes emerged from the qualitative data that further documented the issues that special education teachers of this population face: "Did we cover all our bases?", "All on our shoulders," and "Did we do

enough?”. Such themes represent compelling ideas which were revealed throughout the interviews. Information collected from the interviews provided a humanistic component that assisted the researcher in making sense of the issues that pertain to special education teachers of students with severe and multiple disabilities, and their perceived barriers to implementing transition EBPs.

Self-Efficacy

Results of the present study demonstrated that self-efficacy was associated with transition professionals’ knowledge and implementation of transition EBPs, as well as participation in training experiences and professional development. The literature suggests that self-efficacy is related to a variety of beneficial educational practices. Although there were no available studies that had examined reported self-efficacy among transition professionals of students with severe and multiple disabilities in particular, Corona et al. (2017) found that special education teachers (of students with mild/moderate disabilities) who had greater levels of self-efficacy were more likely to include EBPs in instruction. In addition to upholding the same findings, the present study builds upon this finding by suggesting that this association is also present among the broader group of transition professionals, including special education teachers of students with severe and multiple disabilities.

The present study examined the subdomains of self-efficacy. Within the area of student engagement, there was not a significant association among knowledge or implementation of transition EBPs. Interestingly, this was the only domain of self-efficacy that was not significant, revealing that transition professionals may lack

confidence in their ability to actively engage students with severe and multiple disabilities.

When considering self-efficacy among transition professionals, future research should focus on examining how such professionals could potentially become highly self-efficacious. Is there a pathway of sequential steps that such individuals must go down? Or is self-efficacy an isolated construct that is inherent within certain professionals? Further, are there catalysts and other variables that work to develop self-efficacy as a final product of work, such as PD/training or knowledge/implementation of EBPs? And finally, can schools, districts, and agencies increase self-efficacy by providing PD/training opportunities, and enable them to become knowledgeable of and implement transition EBPs? While the present study has already examined the association among self-efficacy and knowledge, implementation, and PD/training for transition EBPs, further research could examine the mechanism by which self-efficacy unfolds for teachers and transition specialists, the extent to which self-efficacy is malleable among such professionals, and what the process is to develop this construct within teachers and transition professionals.

Knowledge and Implementation of Transition EBPs

EBPs are teaching strategies that have been repeatedly proven through research to be effective teaching strategies and are mandated components of K-12 education in the United States for all students (Feuer et al., 2002). Although the present study sought information regarding transition professionals' knowledge and implementation of transition EBPs for students with severe and multiple disabilities, there is little to no prior

work on this population in particular. Therefore, the results of the present study will be discussed in relation to work on EBPs more broadly, as they relate to the subset of special education teachers and the broad group of transition professionals.

The qualitative interview data revealed a lack of knowledge and implementation of transition EBPs among several special education teachers of students with severe and multiple disabilities. None of the participants were able to name any of the 21 transition EBPs when asked which transition EBPs are used in the classroom, although all participants did discuss at least one transition EBP at some point during each interview (community-based instruction), with no specific mention of the practice being evidence-based. Previous research has demonstrated that special education teachers of students with mild/moderate disabilities have poor knowledge and/or implementation of EBPs. Less than 5% of educators used EBPs with their students with ASD, and only one third of special education teachers used any strategy that was rated as evidence-based or promising (Hess, Morrier, Heflin, & Ivey, 2008). Results from the present study are consistent with these past findings. While previous literature has focused on special education teachers of students with mild/moderate disabilities and EBPs more broadly, the current study demonstrates that special education teachers of students with severe and multiple disabilities may also have poor knowledge and/or implementation of transition EBPs.

Further, the growing body of literature suggests that special education teachers are less likely to use EBPs and are more likely to use traditional sources like personal experience to determine what works in the classroom (Cook & Cook, 2011, p. 71). Instead, special education teachers are more likely to choose interventions that they think

will work best for their students but are not likely to investigate if the intervention is evidence-based (Burns & Ysseldyke, 2009). Based on the results of the current study, these previous findings can be extended to special education teachers of students who are most vulnerable (i.e., those with severe and multiple disabilities). In the qualitative component of the present study, special education teachers explained that they used experience and knowledge of what will benefit their students to create and plan lessons and activities for their class. Many of them commented on how their class make-up changes each and every year, and so do their students' abilities. Therefore, special education teachers of students with severe and multiple disabilities are likely to keep in mind the unique strengths, needs, and interests of their students, while working towards the individualized "end goal" for adulthood. In fact, the theme "Did we do enough?" emerged as a central message of the interview transcripts, as participants reflected on the effectiveness of their own practice and student independence, rather than reflecting on a specific methodology's effectiveness.

Whereas the qualitative interviews yielded more experiential knowledge and less discussion about individual transition EBPs, the quantitative survey was used to examine responses to individual questions targeting knowledge and implementation, on average, for specific transition EBPs among a broader group of transition professionals. Interestingly, the two transition EBPs that participants reported having greatest knowledge of (community-based instruction and simulations) were not the two most frequently implemented practices (visual displays and self-management). That is, the EBPs that participants reported having greatest knowledge of were *not* the same EBPs they implemented most frequently, on average. The notion that participants had greater

knowledge of transition EBPs, but actively chose to implement others more frequently, is particularly interesting, as it leads one to speculate why these factors are discrepant.

When applied to EBPs more broadly, previous studies have found a similar discrepancy between knowledge and implementation among novice special education teachers (Jones, 2009). In the first component of Jones' study, many special education teachers conveyed adequate knowledge of EBPs and went so far as to chronicle the worth and value of such practices in conversation. However, when observed teaching in the classroom, these special education teachers did not implement the EBPs they had discussed or valued, and several participants did not use EBPs at all. Results demonstrated that there was a disconnect among special education teachers' perceived knowledge of EBPs and actual implementation in the classroom.

Although the present study did not formally observe implementation of transition EBPs as in Jones' (2009) study, the differences among reported knowledge and reported implementation of EBPs remain evident, even when applied to the broader group of transition professionals at present. The similarity in findings among these two related studies suggests that some sort of impediment may prevent transition professionals, including special education teachers, from implementing EBPs to the extent to which they are knowledgeable of them.

Furthermore, in another survey-based research study, special education teachers of students with ASD rated the efficacy of specific practices in a survey; however, their reports of the strategies they believed were most effective were not consistent with their implementation rates of such practices in the classroom (Kodak et al., 2018). While the present study found a discrepancy between knowledge and implementation rates of

specific practices, these results are similar to other studies focused on similar participant populations.

Results of the present study are similar to that of other survey-based research findings among similar participant groups. Professionals who worked with students with ASD in school settings reported using strategies from several different curriculums, since there was not one specific curriculum that met the needs of all learners (Love et al., 2008). In the present study, the transition EBPs reflected a variety of instructional and curriculum-based strategies and methods from many different academic domains. For example, several transition EBPs in the present study were based on methods from applied behavior analysis (ABA) whereas other transition EBPs focused on published curricula such as “*Whose Future is it Anyway?*”

When conducting qualitative interviews in the current study, the researcher proactively sought information on perceived barriers to the implementation of transition EBPs. The themes “Did we do enough?” and “all on our shoulders” documented the struggles that many special educators face, such as fulfilling legal requirements of IDEA, giving priority to academics rather than to transition EBPs such as community-based instruction, and managing a variety of other responsibilities such as challenging behavior and teaching assistants. In consideration of the unbalanced relationship between the transition EBPs that special education teachers have knowledge of versus those they report implementing, and being mindful of barriers to implementation, there are various factors to discuss. Jones (2009) suggested that special education teachers may be unsure of how to implement EBPs or may be unable to recognize the practices they use in their own teaching. The present study built upon this suggestion by taking the perceived

barriers to implementation into account, which may offer additional interpretations to an otherwise paradoxical research finding. For example, the ever-changing law, as cited by special education teachers of students with severe and multiple disabilities in the current study, has led to schools prioritizing academic instruction at any cost, including the neglect of transition EBPs. Another potential explanation is that transition professionals of students with the most intense needs have incredibly limited time to learn how to implement transition EBPs, when accounting for the *numerous responsibilities* such as managing challenging behavior and working with teaching assistants. Future research should continue to focus on the research to practice gap between knowledge and implementation of transition EBPs and determine why transition professionals may be less likely to implement the transition EBPs of which they have the greatest knowledge.

Barriers to Implementation of Transition EBPs

Although many researchers have found that job skills training has led to greater rates of competitive employment among individuals with disabilities after high school, federal mandates may preclude school districts from preparing individuals with disabilities with the curriculum that they need the most. The Elementary and Secondary Education Act (ESEA) places heavy emphasis on academics, leaving little room in the curriculum for teaching functional and job-related skills (Bouck, 2010; Kim & Dymond, 2010). Despite the importance of job-related trainings, individuals with disabilities may not be able to participate in vocational programs due to school districts' prioritization of academic content areas. This finding is troublesome when considering the importance of

obtaining gainful employment after high school for individuals with severe and multiple disabilities and the current unemployment rates among individuals within this subtype.

Professional Development and Training

Within the quantitative component of the study, transition professionals reported dismal rates of professional development and training opportunities and participation. Previous research has documented the lack of adequate transition preparation at the university level for transition professionals as well (Plotner & Fleming, 2014). Despite low reports of opportunity, however, those professionals who reported higher professional development and training tended to also report greater knowledge and greater implementation of EBPs, pointing to the potential importance of such opportunities. Moreover, in the present study, participation in and access to PD/training was associated with greater self-efficacy. Though PD/training experiences reported by transition professionals are incredibly limited, the few PD/training experiences that participants did have appeared to make a great difference. As discussed previously, self-efficacy is also related to a variety of beneficial practices such as greater knowledge and implementation of transition EBPs in the current study. Whereas PD/training is typically offered to provide additional knowledge, participation in and access to PD/training may have an unexpected beneficial outcome, such as greater confidence in attempting to change student outcomes among staff. However, because the direction of the association cannot be determined in the present study, it is inconclusive whether professionals felt more confident and/or knowledgeable in their practice, resulting in higher reports of self-

efficacy, or if greater self-efficacy leads to increased participation in PD/training.

Nevertheless, the results of the present study revealed that PD/training is associated with self-efficacy, as well as knowledge and implementation of transition EBPs among transition professionals who work with students who have the most significant needs.

Within the qualitative component of the study, many special education teachers expressed the need for additional knowledge and training on transition. In fact, many participants expressed a desire to work with a transition specialist, who could serve as a link between families of students and the adult service system. Given the finding of an association between PD/training and self-efficacy in the quantitative component of the study, and keeping in mind the firsthand experiences of special education teachers who so desperately want and need to learn more about transition on behalf of students and their families, future research should focus on the effectiveness of specific training programs and packages among transition professionals to assist in improving knowledge and implementation rates of transition EBPs.

Observations of the Researcher

The qualitative component of the study reaffirmed the important role that special education teachers of students with severe and multiple disabilities play in adequately preparing such students to effectively transition into adulthood effectively. As a full-time special education teacher with 9 years of classroom experience, the researcher felt it was important to illuminate educators' voices regarding their experience and beliefs, and to gain insight from their perspectives.

As someone who pursued her Master's degree in severe and multiple disabilities and went on to work full-time as a special education teacher in a life skills program at a public high school, the researcher found herself wondering how she could adequately prepare each individual student for his/her best future, while still fulfilling IDEA mandates; considering each student's unique strengths, interests, and needs; and also taking into consideration the values of the family. Yet she struggled to discover appropriate ways to fulfill *all* these goals and felt mounting pressure as her students' graduation dates loomed near.

The impetus behind conducting qualitative interviews was to collect additional data that would illuminate the issues that special education teachers of students with severe and multiple disabilities face, while synthesizing information on transition EBPs that such teachers know about and use often. Throughout the semi-structured interviews, many observations were made.

One observation that pervaded all of the interviews that the researcher conducted was the idea that special education teachers of students with severe and multiple disabilities did not feel knowledgeable about transition EBPs. Across all of the interviews, participants were asked to list which transition EBPs were used. Although none of the special education teachers were able to list one of the 21 transition EBPs, it became clear throughout the interviews that many of these teachers did in fact use transition EBPs in their classrooms such as community-based instruction and computer-assisted instruction. Therefore, although participants did not necessarily feel as if they could appropriately respond to the interview question, many of them did possess

knowledge of transition EBPs and demonstrated that they use such EBPs in their own classrooms.

Limitations and Future Research

The present study investigated transition professionals' knowledge and implementation of transition EBPs focusing on an understudied population of students with severe and multiple disabilities and the variables that could help improve their post-school outcomes were at the core of this study. Thus, the findings cannot be generalized to all special education teachers or teachers more broadly. However, there is a serious shortage of information surrounding the practices of transition professionals, including secondary special education teachers and transition specialists, who work with students with the greatest needs and an inadequate body of literature to which the present study and its findings can be compared. Future research should examine variables and practices that are thought to be effective with students with severe and multiple disabilities in regard to transition, as their high level of need warrants.

Furthermore, the present study examined each of the 21 transition EBPs in relation to participants' knowledge and implementation. While the transition EBPs do have an evidence-base, limited information is available about their effectiveness when used with students with disabilities at various functioning levels, especially those with severe and multiple disabilities. As mentioned previously, much of the past research (e.g., NLTS2, 2010) failed to differentiate students on functioning levels, making it difficult to understand how well each evidence-based practice can be generalized to this population. Future transition-based research on this population should focus on

discovering the specific transition EBPs that are most effective in practice with students with severe and multiple disabilities and identifying an abbreviated list of those practices that have the greatest impact on students with severe and multiple disabilities' post-school outcomes.

Although great efforts were made to mitigate methodological limitations for the present study including the use of both quantitative and qualitative methods, a multitude of considerations must be made, and results should be interpreted with caution. First, in the quantitative component, participants included special education teachers, general education teachers, transition specialists, and other related professionals who collectively made up the group of "transition professionals." However, the self-efficacy measure used among this group of individuals was originally designed for use with teachers. Furthermore, the subdomains examined within the self-efficacy measure were classroom management, instructional strategies, and student engagement. While these subdomains are important to all education professionals, they may not be as important to transition specialists, who may not have had as much experience working with students with severe and multiple disabilities in domains such as classroom management. Future research with larger samples of both special education teachers and transition specialists will allow researchers to examine their experiences separately to better understand whether they have unique training needs.

Moreover, the sample of transition professionals in the present study were predominantly White. While the lack of adequate representation of participants who are from culturally diverse backgrounds is a limitation of the current study, it is also reflective of a broader problem in the field of special education teachers. For example, "the teacher population

across the United States, in both general and special education positions, is predominantly White, yet nearly half of all U.S. students with disabilities are students of color (Fish, 2019, pg. 213; Billingsley, Bettini, & Williams, 2017). Personal characteristics such as transition professionals' race, gender, and cultural perspective are important considerations that may be related to factors examined in the present study such as self-efficacy and instructional decisions. Therefore, these areas should be further explored in future research.

Although the present study did not collect data on the ethnicities of participants' student populations, this would also be important for future research to consider. Further, culturally and linguistically diverse parents may need a more personal relationship with transition professionals to feel that their perspectives are valued in the transition process (Geenen et al., 2001; Geenen et al., 2003; Landmark et al., 2007; Kozleski, 2000). Past work suggests that in practice, there were very few references to the cultural background of students with disabilities in transition plans (Powers et al, 2005). Given the important role that cultural values play in the post-secondary goals and expectations of individuals with disabilities and their families, this information is of critical importance for future research on transition planning.

Another limitation of the quantitative component is results of the findings pertaining to university preparation. In 2004, IDEA was reauthorized to include transition planning as a federally required mandate for all students with disabilities. Although findings revealed that there was no difference in knowledge of transition based on attending a university preparation program before or after the reauthorization, it is

likely that it takes years for information to trickle down from legal revisions to university-level practice.

Several limitations in the data warrant caution when interpreting results. First, the study was unable to adequately examine differences in special education teacher knowledge in regard to specialized low incidence disability certification. Due to the limited number of participants who were special education teachers with low incidence disabilities certification, there was not enough statistical power to run analyses to determine if there was a difference between knowledge of transition EBPs among those who were certified in low incidence disabilities as opposed to those who were certified in mild/moderate disabilities. In addition, because transition professionals were asked to rate their knowledge of each transition EBP, immediately followed by the frequency of implementation of such EBP, this may have resulted in a shared method variance, thus inflating the strength of the correlations.

Within both the quantitative and qualitative components of the study, there are limitations to participant recruitment methods. For the survey component, the researcher used social media accounts as well as e-mail blasts to various organizations in New York to obtain participation from individuals who both met inclusionary criteria and were willing to participate. Furthermore, the researcher sought additional participation in the qualitative component from five special education teachers from her professional network. With these considerations, the demographic and geographical characteristics of such participants are not necessarily representative of the entire population of transition professionals. Future research should aim to recruit a larger sample of transition professionals across the United States and to seek information on state differences as they

pertain to the individual adult service systems and transition planning practices for students with severe and multiple disabilities.

While the present study did take into consideration many factors that impact the likelihood of having knowledge of and utilizing transition EBPs such as self-efficacy, university preparation, experience, and PD/training, results demonstrate that there are more factors that can and should be brought into the explorative model. Potential areas of exploration include collecting information on student socio-economic status, teachers' highest earned educational degree, and family involvement.

Furthermore, the present study did not focus specifically on the very important role that families play in their child's post-secondary transition. While individual student outcomes are highly individualized and dependent on a student's strengths, interests, and needs, the family plays an important role in determining what may be best for their child, especially if they will support and carry out the plan. Future research should focus on teachers' decision-making instructional techniques as they relate to individual students' post-school goals and outcomes.

Implications and Recommendations

The present study examined the relationship between university preparation, professional development/training, experience, and self-efficacy on practitioners' knowledge and use of transition EBPs for students with severe and multiple disabilities. Though additional research in the area of transition EBPs among this population of students is warranted, the findings also suggest immediate implications for current practice at both the university and secondary school levels.

In general, universities should adequately prepare transition professionals to work with unique student populations that they may encounter, such as those with severe and multiple disabilities. Students with severe and multiple disabilities have unique needs such as communication impairments and potentially challenging behavior. In consideration of the finding that self-efficacy in the subdomain of student engagement was the only subdomain that was not significant, more emphasis on how to engage students with significant disabilities is needed within university-level programs that lead future work as a transition professional.

University level preparation among secondary special education teachers and transition specialists must incorporate content on transition EBPs into required coursework. The majority of transition professionals surveyed disagreed or strongly disagreed with the statement that they gained knowledge of transition EBPs in their university-based program, revealing a lack of appropriate preparation in the area of transition EBPs. The required coursework in university-based preparation programs for pre-service secondary special education teachers and transition specialists must reflect content that is pertinent to the respective field of work and its continuous advances. First, such programs should inform students that there are, in fact, EBPs in the area of secondary transition. Within the present study, it remains unclear if some transition professionals were aware that such practices existed. This is evidenced by the researcher's direct inquiry in the qualitative interviews, to which the participants were unable to list or explain any of the transition EBPs they use in their practice. Second, university programs should aim to incorporate content on the post-secondary transition for students with disabilities, including legal requirements and current trends in post-

school outcomes. With this information, university instructors can underscore the importance of adequate preparation in transition planning and implementing transition EBPs to prevent cyclical patterns of poor post-school outcomes among students with significant disabilities. Third, university programs must strive to teach *how* to implement transition EBPs. EBPs must be implemented with fidelity to be effective, and universities must not make the assumption that pre-service students can independently make the jump from knowledge to implementation.

The present study reaffirms the need for increased participation and attendance in PD/training specific to transition EBPs. On average, transition professionals reported that they “seldom” are provided training by their district/agency in transition EBPs and they “seldom” attend such trainings. At the most basic level, school districts and agencies should work to increase their employees’ knowledge of transition EBPs through opportunities to participate in and attend pertinent training. This is particularly important when considering transition professionals’ who have worked with students with severe and multiple disabilities across multiple generations. As the field continues to develop and evolve and federal legislation continues to prioritize outcomes for students with disabilities, we must not assume that all professionals are privy to such changes. Up to date PD/training opportunities and attendance can assist transition professionals with all levels of experience in attaining the knowledge that they need to perform their jobs successfully and effectively.

Further, the study revealed that self-efficacy was significantly associated with PD/training. Since self-efficacy is related to a variety of beneficial outcomes for professionals and their students, PD/training is warranted even further. On a deeper

level, school districts and agencies can work to increase the implementation of transition EBPs among staff. The current study found that participants had knowledge of specific transition EBPs but chose to implement others, potentially revealing barriers to implementation. To further strengthen staff knowledge of transition EBPs and work towards increased implementation, transition professionals who utilize specific transition EBPs can be observed by colleagues while implementing such techniques. In addition to aforementioned PD/training sessions, transition professionals can learn from their colleagues who feel knowledgeable of and regularly implement transition EBPs in an effort to decrease the research to practice gap. Those in leadership roles can empower transition professionals to adopt transition EBPs by providing PD/training opportunities and other observational learning opportunities to increase knowledge and implementation of such practices.

The theme “All on Our Shoulders” emerged from the interview component of the present study, demonstrating that special education teachers may feel tremendous burden in their work. Subthemes such as *academic priority*, *legal requirements*, and *need for knowledge* document the struggle that many teachers face when it comes to fulfilling all of the responsibilities that their positions entail. Schools can work to decrease the burden of responsibilities that special education teachers of students with severe and multiple disabilities may face by partnering with agencies and transition specialists, who can serve as the connecting piece between school and the adult-service system. Additionally, these transition specialists can relay accurate and current information about the adult service system and post-school programming, which the current study revealed was a great challenge for special education teachers.

Implications of the present study include making improvements in transition professional programs at the university level, increasing PD/training opportunities specific to transition EBPs, and connecting schools with transition specialists to alleviate the burden of responsibilities for special education teachers and serve as an informative link between school and post-school information for families of students with severe and multiple disabilities.

Conclusion

The post-secondary transition is a critical time period in students' lives that requires adequate planning, especially for students with severe and multiple disabilities, who will continue to need support in adulthood. Yet there is limited research surrounding this unique population of students and the special education teachers, transition specialists, and other collaborative transition professionals who work together to devise a comprehensive and appropriate plan for the future. There are 21 transition EBPs that transition professionals can use to teach skills that will enhance the lives of students with severe and multiple disabilities and their families, long after their high school graduation, although there is limited research on transition professionals' knowledge and implementation of such transition EBPs in practice. The results of the present study offer an important first step toward this effort. Continued research emphasis on factors that surround greater knowledge and implementation of transition EBPs among transition professionals who support students with severe and multiple disabilities will help facilitate better outcomes for these students, their families, and the world at large.

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Appendix A

Quantitative Study

Section A: Demographic Information

Section B: Self-efficacy measure

Section C: Knowledge of Transition EBPs

Section D: Professional Development/Training

Section E: Implementation of Transition EBPs

Appendix B: Qualitative Study

Section A: Qualitative Interview Questions

Section A: Demographic Information, Adapted from Plotner et al., 2016

1. What is your gender?
Male
Female
2. What is your age?
3. What is your ethnicity?
4. What is your current job title?
Special education teacher
General education teacher
Other
5. Do you work with at least one student who has a severe and multiple disability or have you worked with at least one student with a severe and multiple disability within the last two years?
Yes
No
6. What is the average age of the students you teach?
11-14
14-16
16-18
18-20
20-22
7. What is your highest earned educational degree?

Bachelors
Masters
Doctoral

8. Did you graduate from your preservice special education teacher program before or after 2004? If you studied special education for more than one degree, please think about the degree that you earned most recently.

Before 2004
After 2004

9. How many years of experience do you have as a special education teacher of students with severe and multiple disabilities?

One year or less
1-5 years
6-10 years
11-15 Years
More than 16 years

10. Which teacher certifications have you earned? Please include all of the ones you have earned even if you are using only one in your current position.

11. What state do you currently work in?

12. Is the community in which you teach urban or rural?

Urban
Rural

13. What is your class ratio? (i.e. what is the largest amount of students that can be in your class at one time?)

6:1:1
6:1:2
8:1:1
8:1:2
12:1:1
12:1:2
15:1:1
15:1:2
Other: please write in your ratio

14. What is the primary disability category that is represented among the students with severe and multiple disabilities that you work with?

Autism
Deaf-blindness

Deafness
Emotional disturbance
Hearing impairment
Intellectual disability
Multiple disabilities
Orthopedic impairment
Other health impairment
Specific learning disability
Speech or language impairment
Traumatic brain injury
Visual impairment (including blindness)

15. Is your school public or private?

Public
Private

Section B: Self-efficacy measure

Adapted from Woolfolk-Hoy & Hoy, 1990

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.

	0	1	2	3	4
	None at all	Very Little	Some degree	Quite a bit	A great deal
1. How much can you do to control disruptive behavior from a student with a severe and multiple disability in the classroom?	0	1	2	3	4
2. How much can you do to motivate students with severe and multiple disabilities who show low interest in school work?	0	1	2	3	4
3. How much can you do to get students with severe and multiple disabilities to believe they can succeed in school?	0	1	2	3	4
4. How much can you do to help your students with severe and multiple disabilities value learning?	0	1	2	3	4
5. To what extent can you craft questions that are appropriate for students with severe and multiple disabilities to understand?	0	1	2	3	4

6. How much can you do to get students with severe and multiple disabilities to follow school and classroom rules?	0	1	2	3	4
7. How much can you do to assist a student with a severe and multiple disability in calming down?	0	1	2	3	4
8. How well can you establish a classroom management system with students with severe and multiple disabilities?	0	1	2	3	4
9. How much can you use a variety of assessment strategies to identify strengths/needs for students with severe and multiple disabilities?	0	1	2	3	4
10. To what extent can you clarify confusion or misunderstandings for students with severe and multiple disabilities?	0	1	2	3	4
11. How much can you assist families of students with severe and multiple disabilities to help their child do well in school?	0	1	2	3	4
12. How well can you implement alternative strategies in your classroom of students with severe and multiple disabilities?	0	1	2	3	4

Section C: Knowledge of Transition EBPs

Adapted from Test et al., 2009

	0 Very Little I know nothing about this practice	1	2	3	4 To a Very Great Extent I know a great deal and could instruct others on this
<p>1. Backward chaining</p> <p>OR</p> <p>A student performs the final behavior in a task analysis sequence and is reinforced once the task has been performed, at which time the next-to-last behavior is introduced to the student [Backward chaining]</p>					
<p>2. Computer-assisted instruction</p> <p>OR</p> <p>Using a computer or other type of technology to improve students' skills, knowledge, and academic performance.</p>					
<p>3. Community-based instruction</p> <p>OR</p> <p>Instruction of functional skills that takes place in the community where target skills can be practiced within a natural environment.</p>					

<p>4. Constant time delay</p> <p>OR</p> <p>Providing a student a fixed amount of time between instruction and giving a prompt in which the teacher initially presents multiple trials using a 0-second delay, followed by a simultaneous prompt using a fixed time delay.</p>					
<p>5. Forward chaining</p> <p>OR</p> <p>Teaching behaviors identified in a task analysis in their naturally occurring order. Reinforcement is delivered when the criterion for the first behavior in the sequence is achieved then the next step in the task analysis is taught.</p>					
<p>6. “One More Than” strategy</p> <p>OR</p> <p>Teaching students to pay one more dollar than requested.</p>					
<p>7. Parent training modules</p> <p>OR</p> <p>Training packages in which a single topic or small section of a broad topic is studied for a given period of time to parents.</p>					

<p>8. Progressive time delay</p> <p>OR</p> <p>Gradually increasing the amount of time between instruction and giving a prompt during which the teacher initially begins with a 0-second delay followed by a simultaneous prompt condition that gradually and systematically increases the time delay (e.g. 0 second to 2 seconds to 4 seconds).</p>					
<p>9. Published curricula</p> <p>OR</p> <p>Four published curricula for teaching students to participate in and lead IEP meetings, be involved in the transition planning process, and gain self-advocacy skills: Self Advocacy Strategy, Self-Directed IEP, Whose Future Is It Anyway?, and Check and Connect</p>					
<p>10. Response prompting</p> <p>OR</p> <p>Using stimuli that function as an extra cue or reminder for a desired behavior and is typically emitted in the form of verbal instructions, modeling, and/or physical guidance.</p>					

<p>11. SDLMI</p> <p>OR</p> <p>A model that teaches students to become self-regulated learners in order to gain self-determination skills and includes three phases that provide students with opportunities to set a goal, develop a plan to address the goal, and evaluate changes to successfully meet the goal.</p>					
<p>12. Self-management</p> <p>OR</p> <p>Monitoring or evaluating personal behavior in order to change and control a subsequent behavior.</p>					
<p>13. Simulation</p> <p>OR</p> <p>Using materials and situations in the classroom that approximate the natural environment conditions where the behavior will be performed in the community.</p>					
<p>14. System of least prompts</p> <p>OR</p> <p>A method in which the teacher begins with the least intrusive prompt giving the student the opportunity to perform the response with little assistance, followed by gradually increasing the level of prompting based on the</p>					

degree of assistance the student needs to emit the appropriate response.					
15. System of most prompts OR A method in which the teacher begins with the most intrusive prompt (e.g. physical guidance) guiding the student through the performance sequence and gradually decreases the level of prompting as training progresses.					
16. Total task training OR Training a student on each step of a task analysis during every instructional setting.					
17. Mnemonic strategies OR Memory-associative techniques, keyword mnemonic strategies, keyword-pegword, and reconstructive elaborations.					
18. Peer assistance OR Having a student deliver academic instruction to another student and inclusive peer tutoring, cooperative learning, and peer instruction.					

<p>19. Self-management strategies</p> <p>OR</p> <p>Self-monitoring, self-evaluation, self-instruction, goal setting, and strategy instruction to allow students to monitor and assess academic and behavioral performance.</p>					
<p>20. Technological interventions</p> <p>OR</p> <p>Using some form of computer-assisted instruction to teach a variety of academic skills to students.</p>					
<p>21. Visual displays</p> <p>OR</p> <p>Representative tools used to facilitate learning and include graphic organizers, cognitive organizers, cognitive maps, structured overviews, tree diagrams, concept maps, and thinking maps.</p>					

Section D: Professional Development/Training

Adapted from Plotner et al., 2016

1. How often do you currently attend training related to secondary transition services?	Never	Seldom	Occasionally	Often
2. How much training do you get per year in regard to transition services?	One day or less	2-4 days	5-8 days	9 or more days
3. Please rate how well you feel your supervisor supports professional development in the area of transition?	Does not support	Minimal level of support	Moderate level of support	High level of support
4. My district (or agency) has provided me with training on Evidence-based practices related to secondary transition.	Never	Seldom	Occasionally	Very often
5. My district (or agency) has provided me with resources related to evidence-based/research-based transition practices for secondary students with disabilities.	Never	Seldom	Occasionally	Very often
6. I have participated in professional development opportunities outside of my district (or agency) related to EBPs for secondary students with disabilities. (State Conferences)	Never	Seldom	Occasionally	Very often

7. I have participated in professional development opportunities outside of my district (or agency) related to EBPs for secondary students with disabilities. (National Conferences)	Never	Seldom	Occasionally	Very often
8. My professional development opportunities related to EBPs have included training on using data-based decision making to determine effectiveness of EBPs for improving student outcomes.	Never	Seldom	Occasionally	Very often
9. I gain knowledge of EBPs for secondary students with severe and multiple disabilities by reading professional journals	Strongly disagree	Disagree	Agree	Strongly Agree
10. I gained knowledge of EBPs for secondary students with severe and multiple disabilities in my university-based teacher preparation program.	Strongly disagree	Disagree	Agree	Strongly Agree
11. My professional development opportunities have fully-prepared me to implement secondary transition EBPs with secondary students with severe and multiple disabilities.	Strongly disagree	Disagree	Agree	Strongly Agree

Section E: Implementation of Transition EBPs

Adapted from Plotner et al., 2016 and Test et al., 2015

	0 Never	1 On rare occasions	2 Sometimes One or more times per week but not every day	3 Often About once per day	4 Frequently More than once per day
1. Backward chaining OR A student performs the final behavior in a task analysis sequence and is reinforced once the task has been performed, at which time the next-to-last behavior is introduced to the student.					
2. Computer-assisted instruction OR Using a computer or other type of technology to improve students' skills, knowledge, and academic performance.					
3. Community-based instruction OR					

<p>Instruction of functional skills that takes place in the community where target skills can be practiced within a natural environment.</p>					
<p>4. Constant time delay</p> <p>OR</p> <p>Providing a student a fixed amount of time between instruction and giving a prompt in which the teacher initially presents multiple trials using a 0-second delay, followed by a simultaneous prompt using a fixed time delay.</p>					
<p>5. Forward chaining</p> <p>OR</p> <p>Teaching behaviors identified in a task analysis in their naturally occurring order. Reinforcement is delivered when the criterion for the first behavior in the sequence is achieved then the next step in the task analysis is taught.</p>					
<p>6. “One More Than” strategy</p> <p>OR</p> <p>Teaching students to pay one more dollar than requested.</p>					
<p>7. Parent training modules</p>					

<p>OR</p> <p>Training packages in which a single topic or small section of a broad topic is studied for a given period of time to parents.</p>					
<p>8. Progressive time delay</p> <p>OR</p> <p>Gradually increasing the amount of time between instruction and giving a prompt during which the teacher initially begins with a 0-second delay followed by a simultaneous prompt condition that gradually and systematically increases the time delay (e.g. 0 second to 2 seconds to 4 seconds).</p>					
<p>9. Published curricula</p> <p>OR</p> <p>Four published curricula for teaching students to participate in and lead IEP meetings, be involved in the transition planning process, and gain self-advocacy skills: Self Advocacy Strategy, Self-Directed IEP, Whose Future Is It Anyway?, and Check and Connect</p>					
<p>10. Response prompting</p> <p>OR</p> <p>Using stimuli that function as an extra cue or reminder for a desired behavior and is typically</p>					

emitted in the form of verbal instructions, modeling, and/or physical guidance.					
<p>11. SDLMI</p> <p>OR</p> <p>A model that teaches students to become self-regulated learners in order to gain self-determination skills and includes three phases that provide students with opportunities to set a goal, develop a plan to address the goal, and evaluate changes to successfully meet the goal.</p>					
<p>12. Self-management</p> <p>OR</p> <p>Monitoring or evaluating personal behavior in order to change and control a subsequent behavior.</p>					
<p>13. Simulation</p> <p>OR</p> <p>Using materials and situations in the classroom that approximate the natural environment conditions where the behavior will be performed in the community.</p>					
<p>14. System of least prompts</p> <p>OR</p>					

<p>A method in which the teacher begins with the least intrusive prompt giving the student the opportunity to perform the response with little assistance, followed by gradually increasing the level of prompting based on the degree of assistance the student needs to emit the appropriate response.</p>					
<p>15. System of most prompts</p> <p>OR</p> <p>A method in which the teacher begins with the most intrusive prompt (e.g. physical guidance) guiding the student through the performance sequence and gradually decreases the level of prompting as training progresses.</p>					
<p>16. Total task training</p> <p>OR</p> <p>Training a student on each step of a task analysis during every instructional setting.</p>					
<p>17. Mnemonic strategies</p> <p>OR</p> <p>Memory-associative techniques, keyword mnemonic strategies, keyword-pegword, and reconstructive elaborations.</p>					

<p>18. Peer assistance</p> <p>OR</p> <p>Having a student deliver academic instruction to another student and inclusive peer tutoring, cooperative learning, and peer instruction.</p>					
<p>19. Self-management strategies</p> <p>OR</p> <p>Self-monitoring, self-evaluation, self-instruction, goal setting, and strategy instruction to allow students to monitor and assess academic and behavioral performance.</p>					
<p>20. Technological interventions</p> <p>OR</p> <p>Using some form of computer-assisted instruction to teach a variety of academic skills to students.</p>					
<p>21. Visual displays</p> <p>OR</p> <p>Representative tools used to facilitate learning and include graphic organizers, cognitive organizers, cognitive maps, structured overviews, tree diagrams, concept maps, and thinking maps.</p>					

Appendix B

Qualitative Study

Section A: Qualitative Interview Questions

1. Please tell me about your experience in working with students with severe and multiple disabilities and in what capacity.
2. Are you knowledgeable of evidence-based practices in the area of secondary transition? Can you tell me about some of these practices?
3. Which evidence-based practices in secondary transition do you use with your student(s)? How often do you use them per week?
4. What knowledge do you feel professionals must know in order to effectively transition plan for the future?
5. Do you believe there are barriers that teachers of students with severe and multiple disabilities experience regarding the implementation of secondary transition EBPs? If so, what are they?